

Amphibian and Reptile Survey of the Bitterroot National Forest: 1995

A Report to:

USDA Forest Service

Bitterroot National Forest
1801 North First Street
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Submitted by

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ABSTRACT

A total of 27 site surveys of ponds, lakes, river channels and hillside slopes at 23 sites, and 85 additional opportunistic sightings of reptiles and amphibians, were made on and near the Bitterroot National Forest during March to October, 1995. Most surveys were performed by a single individual. Two ponds were visited at least twice, assessed as future amphibian monitoring sites, and one of these was surveyed four times (once a month from May to August). Each survey took 10-60 minutes (mean = 23 minutes) and consisted of a thorough search of the wetland perimeter and netting of near shore aquatic habitats for larvae and tadpoles. Stream sampling was done by hand and dipnet. Hillsides were traversed on foot and checked for snakes and lizards by rolling over rocks and logs. Opportunistic sightings were compiled from road kills, vocal identifications, fortuitous encounters with live animals, and reports from reliable individuals. Historical records of reptiles and amphibians on or near the Bitterroot National Forest were compiled from museum collections, unpublished reports and the published literature.

Efforts were made to sample wetland habitats at different elevations throughout the entire forest, but due to time constraints, weather conditions, and the large area with relatively difficult accessibility, the majority of surveys were near established roads between 3200-5000 feet elevation. Six surveys, however, were above 7000 feet elevation. Surveys were conducted in each of the forest districts, but coverage was uneven, and the Sula and West Fork districts received less attention in 1995 than the Stevensville and Darby districts.

Eight amphibian species (two salamanders, one toad, five frogs) have been reported from the Bitterroot National Forest area; six of these species were encountered in 1995. Among amphibians, the Long-toed Salamander, Tailed Frog, Western Toad and Spotted Frog were found throughout the forest, either during the 1995 survey or previously. Large gaps, however, remain in the distributions of each species. The Coeur D'Alene Salamander (a U.S. Forest Service Sensitive Species) and the Pacific Chorus Frog appear to have very restricted distributions within the forest (the Coeur D'Alene Salamander was not seen in 1995); the introduced Bullfrog appears restricted to sites near the Bitterroot River. The Northern Leopard Frog apparently has been extirpated from the Bitterroot National Forest area (and a large portion of western Montana).

Nine reptile species (one turtle, two lizards, six snakes) have been reported on or near the Bitterroot National Forest; seven of these species were encountered in 1995. The Painted Turtle seems to be limited to the Bitterroot River area north of Hamilton. The Northern Alligator Lizard and Western Skink are widespread in western Montana, including on the BNF, but populations within their ranges appear to be disjunct; current population status of each is unknown and no skinks were reported in 1995. Rubber Boa, Gopher Snake, Western Terrestrial Garter Snake and Common Garter Snake are widespread, but large gaps remain in the distributions of each species; the Gopher Snake seems to be most abundant in the Bitterroot Valley. Racer and Western Rattlesnake appear to be restricted to the east side of the Bitterroot Valley in drier sites; it is surprising that there are so few reports of Racers, and no rattlesnakes were reported in 1995. Only the Western Terrestrial Garter Snake could be considered as abundant and widespread.

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Museum records were received from: American Museum of Natural History, Academy of Natural Science, Brigham Young University, California Academy of Science, Carnegie Museum, University of Puget Sound Museum, Field Museum of Natural History, Glacier National park Museum, Illinois Natural History Survey, University of Kansas, Los Angeles County Museum, Louisiana State University Museum of Zoology, Museum of Comparative Zoology - Harvard, Milwaukee Public Museum, Montana State University Museum, Michigan State University Museum, North Carolina State Museum of Natural History, Northern Louisiana University Museum, University of Colorado Museum, University of Georgia Museum of Natural History, University of Idaho Museum, University of Michigan Museum, University of South Dakota, United States National Museum of Natural History, University of Texas - Arlington, University of Texas - El Paso, and Peabody Museum - Yale.

INTRODUCTION

Many amphibians are apparently declining in the western U.S. and world-wide (see Blaustein *et al.* 1994, Phillips 1995). Acid rain, ozone depletion, pollution by toxic chemicals and heavy metals, predation and/or competition by exotic species, habitat alteration, disease, immune system deficiency, and climate change have all been suggested as possible causes (Corn and Fogelman 1984, Phillips 1990).

Past forestry practices and large scale logging have been shown to be detrimental to resident herpetofauna in some regions of the Pacific Northwest (Corn and Bury 1989, Bury *et al.* 1991). The Tailed Frog (*Ascaphus truei*), present on the Bitterroot National Forest (BNF), is thought to be one of the most sensitive indicators of stream-side and aquatic community health in forested landscapes (R. B. Bury, pers. comm.). Survey data indicate the Northern Leopard Frog (*Rana pipiens*) has disappeared over much of its former range in western Montana. The U. S. Fish and Wildlife Service formerly listed the Western Toad (*Bufo boreas*) as a Candidate (C-2) species in Colorado, Wyoming and New Mexico. Apparent declines have recently been reported in northern Idaho (C. Peterson pers. comm.), northwestern Montana (Werner and Reichel 1994), Yellowstone National Park (Peterson *et al.* 1992), Wyoming and Colorado (Carey 1993). Bullfrogs (*Rana catesbeiana*) have been introduced into waters on or near the BNF and have been implicated elsewhere in declines of native amphibian populations.

The U.S. Fish and Wildlife Service (USFWS) listed two Montana amphibians as Candidate (C-2) species: the Tailed Frog and Spotted Frog (*Rana pretiosa*). The Western Toad was recently petitioned for listing (L. Nordstrom, USFWS, Helena, pers. comm.), however, the USFWS no longer maintains a C-2 Candidate category in the Federal Register. The U.S. Forest Service Region 1 lists the Coeur d'Alene Salamander (*Plethodon idahoensis*) as "Sensitive" and is considering adding the Northern Leopard Frog and Spotted Frog. The Montana Natural Heritage Program and the Montana Department of Fish, Wildlife and Parks list six amphibians [Coeur d'Alene Salamander, Idaho Giant Salamander (*Dicamptodon aterrimus*), Tailed Frog, Canadian Toad (*Bufo hemiophrys*), Spotted Frog, and Wood Frog (*Rana sylvatica*)] and six reptiles [Snapping Turtle (*Chelydra serpentina*), Spiny Softshell (*Apalone spinifera*), Short-horned Lizard (*Phrynosoma douglasi*), Sagebrush Lizard (*Sceloporus graciosus*), Western Hognose Snake (*Heterodon nasicus*), Smooth Green Snake (*Opheodrys vernalis*)] as Animal Species of Special Concern in Montana; the Western Toad, Northern Leopard Frog and Milk Snake (*Lampropeltis triangulum*) are being considered for addition to the list. Thus, about 45% of the 33 known amphibian and reptile species found in Montana are currently listed or being considered for listing by the Montana Natural Heritage Program. Of the listed (or potentially listed) species, six (40%) (Coeur d'Alene Salamander, Idaho Giant Salamander, Tailed Frog, Western Toad, Spotted Frog, and Northern Leopard Frog) occur, have occurred, or potentially occur on the BNF.

Because of concern regarding the apparent global declines of amphibians, and a lack of recent information on the status and distribution of amphibians and reptiles in Montana, the Montana Natural Heritage Program, in conjunction with the Bitterroot National Forest, undertook a preliminary survey of the amphibians and reptiles found on or near the Forest. Primary objectives were to gather together in one document historical records from museum collections,

published literature, unpublished reports, and recent sightings of amphibians and reptiles on and around the BNF. The document will serve as a baseline from which to develop future survey and/or monitoring efforts on the BNF. In addition to archival research efforts, a modest program of field site-surveys was conducted during 1995 to add to the body of information already at hand. This effort included the identification of aquatic sites that might be suitable for long-term monitoring of amphibian population trends.

METHODS AND MATERIALS

Historical locations of amphibians and reptiles were recorded from the literature (see Bibliography) and museum specimens. Records were received from over 20 major museums in North America. Location and other information was then entered into a database and digitized.

Survey sites in 1995 were chosen based on three criteria: 1) Location of streams, seeps and wetlands on topographic maps; 2) past survey sites as given in the literature and personal communications; 3) accessibility of the wetlands by roads or hiking trails. Based on the above, 1-7 sites were chosen daily for surveys. Ten - 60 minutes (mean = 23 minutes) were spent at each site depending upon the size of the area and what was found. Initially, the entire shoreline or a major part thereof, was searched by walking slowly along the edge and up into the surrounding vegetation, including rolling over rocks and logs. At regular intervals, the aquatic habitat was sampled with dipnets for tadpoles or larvae. If the initial sampling showed amphibian/reptile species present, further effort was expended in order to get some idea of abundance and distribution. Rock outcrops or rocky slopes were traversed while turning over potential cover (rocks and logs) under which lizards and snakes might be hiding. No special effort was made to sample for Tailed Frogs, as concurrent stream surveys were being conducted by Forest Service personnel and presence of this species was noted during their surveys (C. Clancy pers. comm.).

During May 1995 two ponds in the Darby District of the Bitterroot Mountains were examined for their suitability as long-term monitoring sites; suitability was based primarily on the diversity of amphibian species reproducing at the site. Both sites were used by three species of amphibians for breeding. One of these (near the confluence of Lost Horse and South Lost Horse creeks, T4NR21WS18SW) was visited once/month from May-August. During each visit the near-shore aquatic habitat was sampled for amphibians using a long-handled dipnet. A total of 50 sweeps was performed, in sets of ten sweeps while wading parallel to the shore, and the number of each species captured on each sweep was recorded. About 25% of the pond margin was sampled, with the same area covered on each visit.

An attempt was made to collect the first few individuals of a species seen at a survey site. The species name was recorded along with the developmental stage and/or standard body measurement and sex (if possible); the animals were then released. Representative samples of the more common species in an area were preserved for permanent museum records and will be deposited at the Idaho State University Museum. Information on museum specimens, including specimens housed in other collections, are available from the Montana Natural Heritage Program in either a printed or electronic format. Water temperature, air temperature, pH and a general description of the area were recorded. Standard data sheets used during this project are given in Appendix 4; the amphibian survey data sheet was developed by USFWS and is used extensively by a variety of researchers in the western U.S. Much site specific data was gathered during these surveys. Not all data have been analyzed or presented in this report, but are available from the Montana Natural Heritage Program.

RESULTS AND DISCUSSION

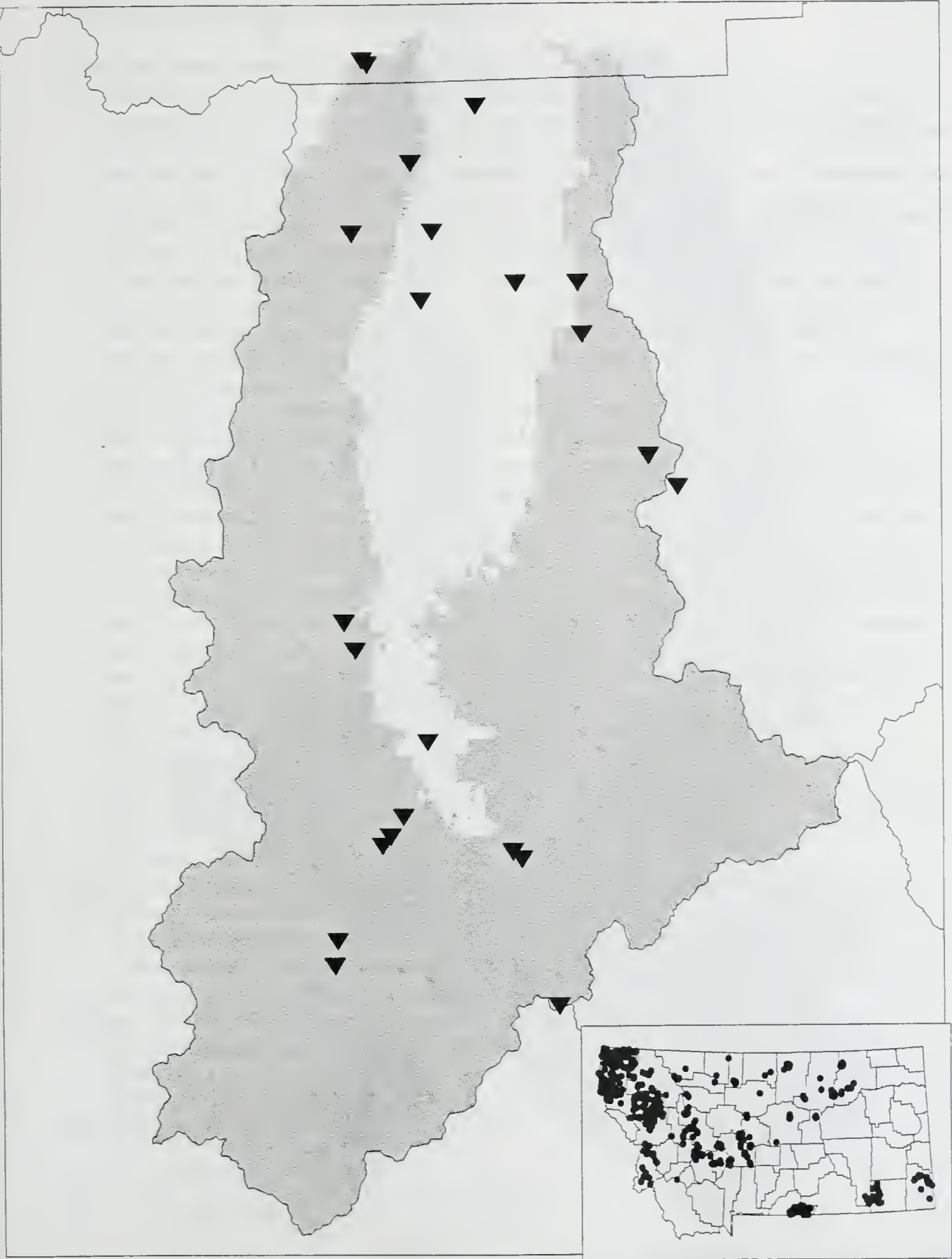
A total of 23 sites were surveyed (two sites more than once) of which 16 (69.6%) had one or more amphibian or reptile species present (Figure 1, Appendices 1 and 2). Although no species were found at seven sites, their absence may have been due to the time of day, weather conditions, or other factors at the time of sampling. The number of survey sites per District varied from 3-10 (Stevensville - 10, Darby - 6, West Fork - 4, Sula - 3). Most sites surveyed were below 5000' elevation, but six were between 7000-8000'. The coverage of all Districts can only be considered preliminary, as large areas remain unsurveyed. Six of the survey sites were not on Bitterroot National Forest land.

In addition to the 23 sites surveyed, there were 85 reliable sightings (i.e. road kills, chance observations) from 1995 for which data are available. Location data from surveys, sightings, and historical records (from the literature and museum specimens) are listed in Appendix 3. The survey and sighting data, in addition to any historical records, were used in constructing the enclosed distribution maps; inset maps for each species are based on sight and specimen records, both recent and historical. Prior to 1930, most historical data from the BNF area were collections made in 1910 by personnel of the U.S. Biological Survey; during the 1930's and 1940's collections were made by W. L. Jellison (see Rodgers and Jellison 1942). Collections since the 1940's, and prior to the recent Natural Heritage Program surveys, are attributable primarily to J. H. Black and R. B. Brunson.

Based on museum specimens, publications or reports, and from personal accounts, eight amphibians (Long-toed Salamander, Coeur d'Alene Salamander, Tailed Frog, Western Toad, Pacific Chorus Frog, Bullfrog, Northern Leopard Frog, Spotted Frog) and nine reptiles (Painted Turtle, Northern Alligator Lizard, Western Skink, Rubber Boa, Racer, Gopher Snake, Western Terrestrial Garter Snake, Common Garter Snake, Western Rattlesnake) have been reported on or near the Bitterroot National Forest. An additional amphibian species (Idaho Giant Salamander) could potentially be found in streams of the Bitterroot Mountains on the Forest. Six amphibian and seven reptile species were actually observed during the 1995 survey.

In the following species accounts, descriptions of similar species cover only those which are known or suspected to occur in Montana (see Reichel and Flath 1995); outside Montana, other similar species may occur which are not covered in this report. Photos of all Montana amphibians and reptiles may be found in Reichel and Flath (1995). Heritage Program Global (G) and State (S) rank codes range from 1 (critically imperiled) to 5 (demonstrably secure, though possibly rare in part of the range). Other codes include Q (taxonomic questions or problems involved that need clarification) and E (established exotic; may be native in nearby regions).

Herp Surveys on or near the Bitterroot National Forest, Montana

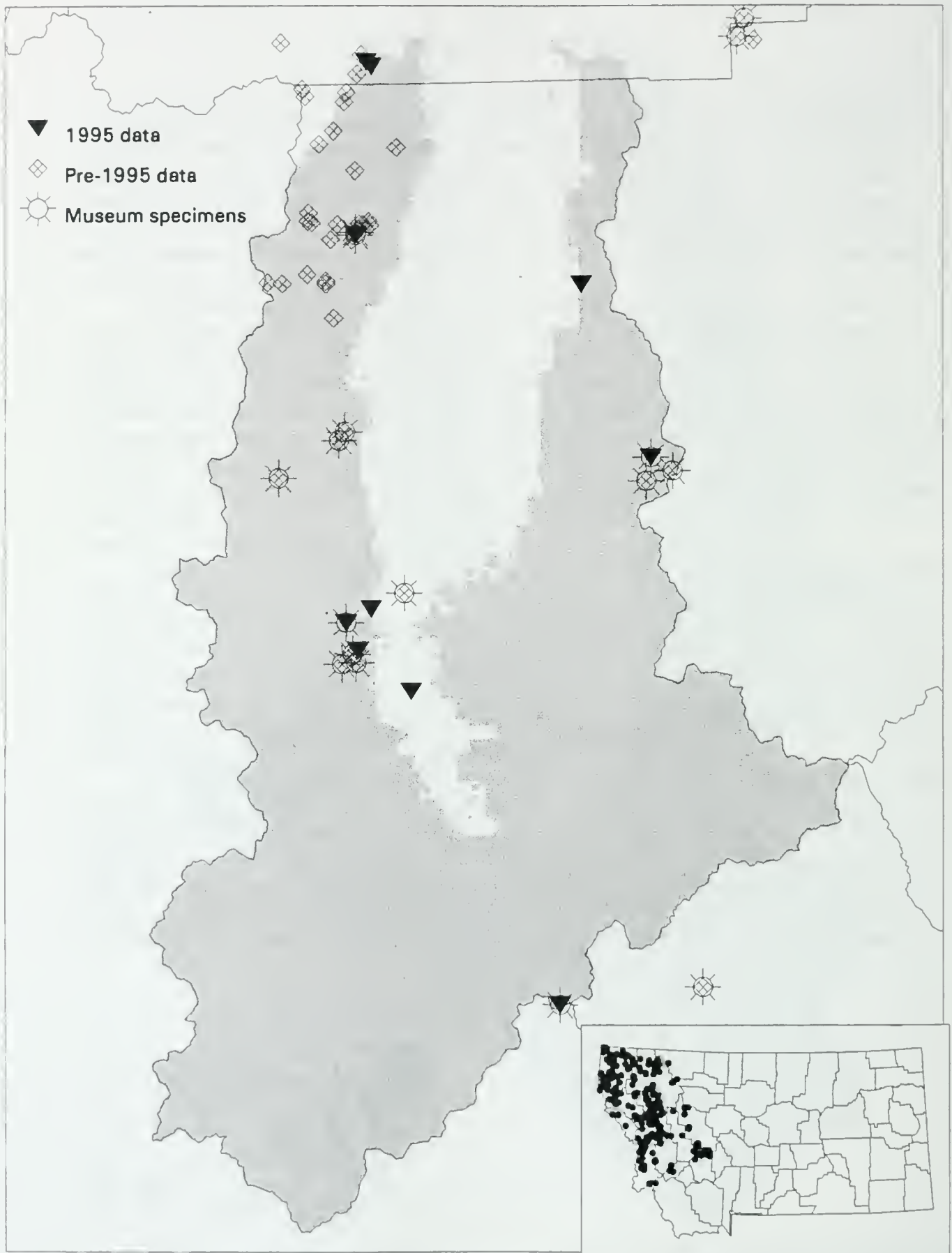


Survey locations from the Montana Natural Heritage Program,

May 01, 1996

Ambystoma macrodactylum -- Long-toed Salamander

Occurrences on or near the Bitterroot National Forest, Montana



Species Present on the Bitterroot National Forest

Long-toed Salamander (*Ambystoma macrodactylum*)

Description: Adults are dark gray to black with an irregular (and sometimes broken) green to yellow stripe down the middle of the back. Adult snout-vent lengths vary from 5-8 cm. All salamanders have smooth moist skin without scales. Adult long-toed salamanders can be told from other Montana species by a combination of: 1) the longest toe on the hind foot which is longer than the sole of the hind foot; 2) lack of a nasolabial groove running vertically from nostril to mouth; and 3) 12-13 costal grooves on side of body. Egg masses are typically laid in small clusters of 5-100 eggs but may be laid singly (Nussbaum et al. 1983). Within the clear gelatinous eggs, the embryos are light colored, while frog and toad embryos are dark. Larval long-toed salamanders are typically brown colored, found in ponds, have three external gills, and are relatively small (<1.75" snout-vent) and slender. They are distinguished from tiger salamander larvae by the 9-13 gill rakers on the inside of the 3rd gill arch (17-22 rakers on the tiger salamander).

Habitat and Habits: Long-toed salamanders are found in a wide variety of habitats from sagebrush to alpine. They breed in ponds or lakes, often in those without fish present. Adults migrate to the breeding ponds immediately after snow-melt and are usually the earliest breeding amphibians in western Montana. Egg masses in the Kootenai National Forest to the north were seen as early as 28 April, although the eggs were at least 10 days old by that date (Werner and Reichel 1994); newly hatched larvae were also observed on 28 April and as late as 8 September 1994. On the BNF, egg masses, and larvae 1.5-2.0 cm long, were found on 19 May 1995 in Kramis Pond (4290') at Lake Como and the monitoring pond near the mouth of Lost Horse Canyon. Larvae 6.5-8.0 cm total length were found on 10 August in the unnamed lake (7990') at the head of McCalla Creek on the SE flank of St. Mary Peak. Two cohorts were present in Carlton Lake (7790') and Little Carlton Lake (7740') on 1 September 1995: larvae 3 cm long and 8-9 cm-long (most of the latter with dorsal adult color patterns and greatly reduced gills). This indicates that some high-elevation individuals probably overwinter as larvae before transforming. Smaller larvae (3-5 cm total length) were also found high in the Sapphire Mountains on 31 August at Dam Creek Lake (7310'). Adults were still surface-active on 23 October 1995 near Carlton Creek at 3940'. In the Pacific Northwest eggs hatch in 3-6 weeks and metamorphosis takes 2-14 months (Nussbaum et al. 1983, Leonard et al. 1993).

Surveying: Larvae can be seen in ponds during the day and sampled with a dipnet. During the breeding season adults may also be seen in the water. During the rest of the spring, summer and fall adults may occasionally be found in and under logs on the forest floor.

Metamorphosed individuals are active at night, particularly when it is warm and rainy; they may be captured at this time by either night searches or pitfall traps.

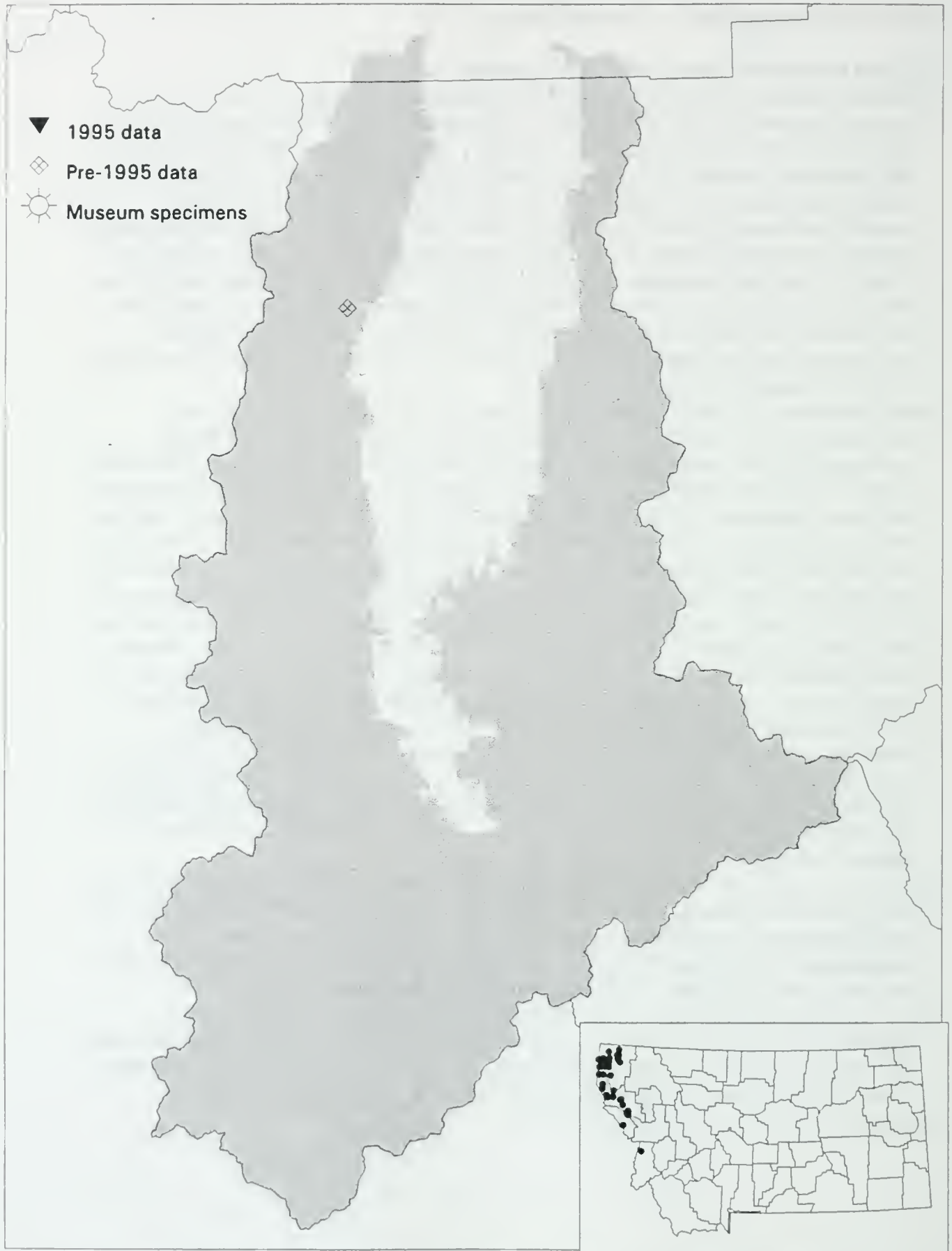
Status: The Long-toed Salamander is the most common salamander in western Montana.

Appears common and wide-spread in suitable habitat on the BNF from 3200-8000' elevation.

This species was encountered at ten locations in 1995; it has been reported from all but the West Fork District on the BNF, but likely occurs there as well.

Montana Natural Heritage Program rank: G5 S5.

Plethodon idahoensis -- Coeur d'Alene Salamander
Occurrences on or near the Bitterroot National Forest, Montana



Coeur d'Alene Salamander (*Plethodon idahoensis*)

Description: Adults are usually dark gray to black with a green, red, yellow, or orange stripe down the middle of the back. The stripe typically has irregular edges, but some individuals may have even edges. A yellow throat patch is usually present. Coeur d'Alene Salamanders have relatively long legs and short, stubby toes. The adult has a body length of 5-6.5 cm. Adult Coeur d'Alene Salamanders have the longest toe on the hind foot shorter than the sole of the hind foot; a nasolabial groove running vertically from nostril to mouth (may require magnification to see); and 14-15 costal grooves on side of body.

Eggs and Larvae: The egg cluster contains between 7-12 small yolked eggs. There is no larval stage and the newly hatched young resemble the adults in coloration.

Similar Species: Long-toed Salamanders have the longest toe on the hind foot longer than the sole of the foot and lack both a yellow throat patch and a groove running vertically from the nostril to the mouth.

Habitat and Habits: Coeur d'Alene Salamanders are very habitat restricted (Cassirer et al. 1994). They are found in springs or seeps, waterfall spray zones, and at the edges of streams. Nearly all sites have fractured rock formations present and nearby habitat is typically forested. Coeur d'Alene salamanders move far down into the interstitial spaces between rocks for protection from desiccation during dry summer months and freezing during the winter (Wilson and Larsen 1988). Mating takes place in both late summer and spring (Lynch 1984). Eggs presumably are laid far down in the rocks, and juveniles are terrestrial. Unlike all other salamanders in Montana, no aquatic-larval stage is present. The Coeur d'Alene Salamander is a member of the Plethodontidae, the only group of lungless salamanders in North America. They respire through the skin and mouth, having an especially rich vascular area in the throat region.

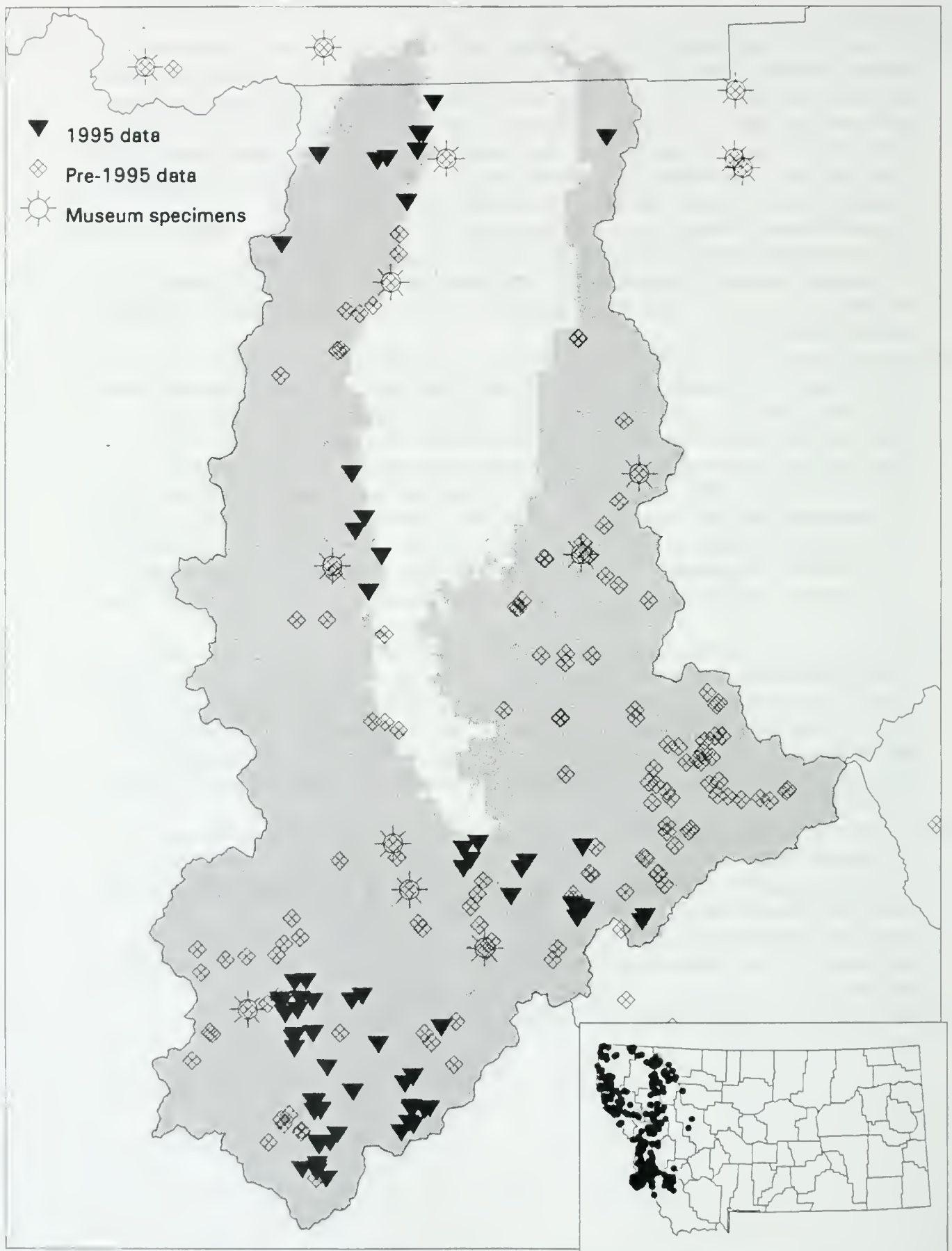
Surveying: During the spring, early summer and fall, adults may be seen in springs or seeps, waterfall spray zones, and at the edges of streams. They are most easily found on rainy nights when the air temperature exceeds 7° C. During the day they may be found by turning over rocks and other litter in and along wet areas; it may take 30 minutes or more to find a single individual during the day. Surveys may disturb or destroy habitat if not done carefully. During dry or cold periods adults move down into the rocks and may not be found (Cassirer et al. 1994).

Status: Coeur d'Alene Salamanders are rare and locally distributed in suitable habitat in northwestern Montana (Cassirer et al. 1994). This species is relatively widespread on the Kootenai National Forest (Werner and Reichel 1994), but has been found at only a single site on the BNF: Sweathouse Creek on the Stevensville District (Genter et al. 1988). This species was not encountered during the 1995 survey. They are a Forest Service Sensitive Species and listed as a Animal Species of Special Concern by the Montana Natural Heritage Program.

Montana Natural Heritage Program rank: G3Q S2.

Ascaphus truei -- Tailed Frog

Occurrences on or near the Bitterroot National Forest, Montana



Tailed Frog (*Ascaphus truei*)

Description: Adults are gray or brown with gray, brown, or occasionally yellow blotches. The adult has a snout-vent length of 3-5 cm. The outer toe of the hind foot is broader than the other toes, unlike other frogs and toads. Tailed Frogs have no tympanum, while other frogs and toads have a tympanum. The male has a bulbous "tail" which acts as an external copulatory organ. Approximately 50 eggs are laid in rosary-like strings attached to the underside of rocks. The tadpole (up to 5 cm snout-vent length) is unique in that it has a large mouth modified into a sucker.

Habitat and Habits: Tailed Frogs are found in and along small, swift, cold mountain streams, often in a variety of forest cover (Harris 1984). In the BNF, they are found in all districts, usually with trout and sculpin species in fast-moving, clear water with temperatures rarely exceeding 54° F. The distribution of frogs within a stream was spotty and unpredictable on the Kootenai National Forest (Werner and Reichel 1994). Adults show extreme philopatry (Daugherty and Sheldon 1982b); absence in suitable habitat may be prolonged by low rates of dispersal and colonization by adults. The highest elevations at which the Tailed Frog were found on the Kootenai National Forest survey of 1994 was 5500' in the Whitefish Range. The lower limit was 2800' along Libby Creek. Most records for the BNF are from lower elevations (< 5000'), but Tailed Frogs have been collected as high as 6300' at Skalkaho Falls in the Sapphire Mountains. Both the upper and lower elevation limits are probably dictated more by the nature of the stream than elevation per se. In the Cascade Mountains of Washington and Oregon, the Tailed Frog appears to be very sensitive to siltation, and frequently disappears in and downstream from clearcuts and water diversions (Corn and Bury 1989, Bury, pers. comm.). Eggs are laid during the early summer and take approximately 4 weeks to hatch. Tadpoles take 1-4 years to metamorphose, depending on water temperature (Nussbaum et al. 1983; Metter 1967). Sexual maturity in Montana is attained at ages 6-7 (Daugherty and Sheldon 1982a) which is the latest age for sexual maturity of any North American amphibian.

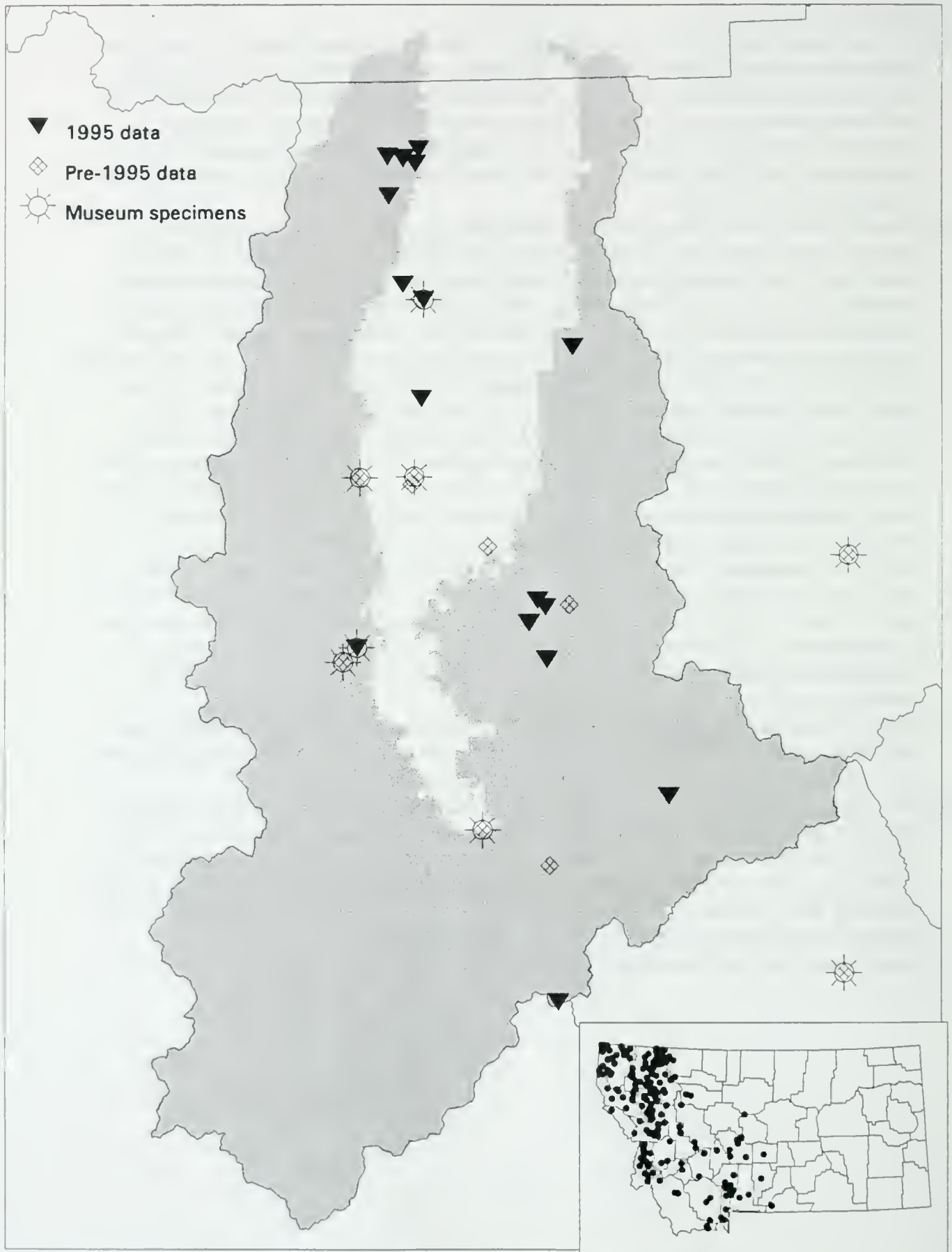
Surveying: Tadpoles are frequently found while fish shocking or conducting snorkel surveys. They may also be found by turning over rocks in rapid water with a net held just downstream. Adults are best found by walking up streams starting shortly after dark.

Status: Apparently common in suitable habitat on the BNF and elsewhere in western Montana. Tailed Frogs were present in 77 (48%) of 160 reaches on 84 streams surveyed on the BNF in 1995 (C. Clancy pers. comm.); >200 reports exist from the BNF since 1990 (Appendix 3). Tailed Frogs have been reported from all four Forest Districts. The Tailed Frog was formerly classified as a Candidate (C2) species by the USFWS, and is listed as an Animal Species of Special Concern by the Montana Natural Heritage Program.

Montana Natural Heritage Program rank: G3G4 S3S4

Bufo boreas -- Western Toad

Occurrences on or near the Bitterroot National Forest, Montana



Western Toad (*Bufo boreas*)

Description: Adults have dry skin with small warts, and are gray, brown, or olive-green with a prominent white or yellowish line down the center of the back; very young transformed toads typically lack the dorsal line, and the warts are often red-brown in color. The adult has a snout-vent length of 6.5-12 cm. This is the only toad in northwestern Montana, and can be distinguished from toads in other areas of Montana by: 1) a cranial crest faint or absent; 2) oval parotoid glands; 3) two tubercles on the sole of the hind feet; and 3) a horizontal pupil. Tadpoles are typically jet black, while all the Montana frog species tadpoles are green or bronze. Eggs are laid in long, clear, double strings, and each has a black embryo.

Habitat and Habits: Adult Western Toads are largely terrestrial and found in a variety of habitats from valley bottoms to high elevations; they breed in lakes, ponds, and slow streams with a preference for shallow areas with mud bottoms. Breeding and egg laying in northwestern Montana usually takes place a month after snow-melt, from April at lower elevations to July at higher sites; Black and Brunson (1971) reported mating activity and egg masses in mid-May near Hamilton. In 1995 adult mating behavior was noted at Kramis Pond (4290') near Lake Como on 19 May. Small toads (2-2.5 cm snout-vent length) were found around shore, but sweeping revealed no tadpoles; tadpoles 3 cm total length were found there on 16 June. Egg masses with large embryos, and tadpoles up to 3.5 cm total length with 2 mm hind limbs, were found near Victor (3450') on 16 June 1995. One small adult and many tadpoles were found at Lost Trail Pass bog (7060') on 24 July 1995. Tadpoles typically take 2-3 months to metamorphose in Montana, depending on water temperature (Black 1970b). At metamorphosis, hundreds of small toads, many with the tails still present, can be found on the shores of breeding ponds.

Surveying: Tadpoles are seen in ponds during the day and can be sampled with a dipnet. During the breeding season, adults may be seen in the water but otherwise they are found in more terrestrial habitats.

Status: During the 1995 survey, Western Toad reproduction was noted on or near all but the West Fork District, but only at one site each. Western Toads were encountered at 16 sites in 1995 (Appendix 3), but the paucity of reproductive effort is of concern. Declines have recently been recorded in Yellowstone National Park (Peterson et al. 1992), Wyoming, and Colorado (Carey 1993). We recommend that a monitoring program be set up for this species, and special efforts made to check more high-mountain lakes and ponds.

Montana Natural Heritage Program rank: G4 S4.

***Pseudacris regilla* -- Pacific Chorus Frog**
Occurrences on or near the Bitterroot National Forest, Montana



Pacific Chorus Frog (*Pseudacris regilla*)

Description: Adults have a dark conspicuous eye line extending from the nostrils to the shoulder.

Basic coloration is quite variable with the background color being green, brown, gray, reddish or bronze. Dark spots and stripes often occur on the head, back, and legs. Most have a dark Y or triangular shaped spot on the head between the eyes. The adult has a snout-vent length of 2-5 cm. Males have a darker throat color and additional folds of skin in the throat region. This is the only frog in Montana with a combination of obvious toe pads and an eye stripe ending at the shoulder. The webbing on the hind feet is very reduced, covering only about 1/2 the length of the toes. Eggs are laid in small clusters of 10-70. The tadpoles are brown/bronze; the eyes are located near the margin of the head when viewed from above, unlike other frog tadpoles in western Montana which have the eyes on top of the head (except northern chorus frogs, *Pseudacris triseriata*, which also have the eyes at the margin of the head).

Habitat and Habits: Pacific Chorus Frogs are regularly found in the water only during the breeding period in spring. Their presence is obvious during this time due to their call which is given frequently at night and sporadically throughout the day. Following breeding they move into adjacent uplands and are rarely seen. In western Montana they breed in temporary ponds in lower elevation forests and in intermountain valleys shortly after snow-melt. During the 1995 survey, individuals of this species were observed or heard only at three sites on the Darby District; reproduction was documented at two ponds from May-August, and a calling adult was reported SW of Hamilton on 24 October. At Kramis Pond (4290'), adults were calling and one egg mass was found on 19 May; by 16 June tadpoles were 2.5-6.0 cm total length. At the monitoring pond (4350') near the mouth of Lost Horse Canyon, tadpoles ranged from 1.5-4.0 cm total length on 16 June, and were 5.0 cm on 12 July. In the Pacific Northwest, eggs hatch in 2-3 weeks and tadpoles take 2-2 1/2 months to metamorphose, depending on water temperature (Nussbaum et al. 1983). Transformed froglets grow quickly following emergence and in Oregon some are sexually mature at 1 year (Nussbaum et al. 1983).

Surveying: Adults may be found during the breeding season in and around ponds and lakes where they breed. Adults are usually heard before they are seen. Adults may call sporadically throughout the summer and fall, especially during wet, warm weather. Tadpoles are seen in the water during the day.

Status: Little is known about Pacific Chorus Frogs in Montana. The species appears to be widespread but localized in northwestern Montana (Werner and Reichel 1994, Reichel and Flath 1995). Prior to 1995 this species was reported on the BNF only from around Lake Como (Rodgers and Jellison 1942, Appendix 3), the first known locality for Montana. Whether this population has always been isolated is currently unclear, but the data continue to indicate a very restricted distribution on the BNF. It is encouraging that reproduction is still occurring in the Lake Como area, over 55 years after first discovery there.

Montana Natural Heritage Program rank: G4 S4?.

Rana catesbeiana -- Bullfrog

Occurrences on or near the Bitterroot National Forest, Montana



Bullfrog (*Rana catesbeiana*)

Description: The largest of North American frogs, adult Bullfrogs may reach 8 inches in snout-vent length. The skin is smooth. Adults are usually pale to dark green or brownish green with darker spots or blotches. There are a series of black bands across the legs. The underside is cream to yellowish with gray mottling. No dorso-lateral folds are present, however there is a prominent ridge running from the eye over the tympanum to the shoulder. Males have extensive yellow pigment on the underside, especially in the throat region, and swollen thumbs. The diameter of the tympanum is larger than the diameter of the eye in males but about the same size in females. Egg masses consist of thousands of eggs and may reach several feet across. Tadpoles may reach 11.3 cm in total length and are olive green with numerous black spots dorsally. The belly is white to creamy with varying amounts of dark mottling. Tadpoles usually take two or more years to metamorphose.

Habitat and Habits: Bullfrogs are the most aquatic of Montana's amphibians, rarely being seen far from the water's edge and usually in the water. They are associated with larger bodies of quiet water such as ponds, lakes or backwaters of streams, usually with extensive emergent vegetation such as cattails or reeds. They emerge in the spring only after air and water temperatures have warmed considerably and insect populations are beginning to proliferate. Breeding probably takes place in July in western Montana when males attract females to their territory by a series of loud brr-umps. Adults were seen in 1995 near Darby in June, and heard 10 July near Corvallis, and 12 July at Lee Metcalf National Wildlife Refuge; silent adults were seen near the Bitterroot River at Florence on 14 August. Tadpoles were seen at the Florence site on 22 April (R. Torquemada pers. comm.), and have been found in ponds near Lolo (B. Hossack pers. comm.). Bullfrogs appear to be expanding their range in the Bitterroot Valley. The large mass of eggs tend to float on the surface when first laid, but sink into the water prior to hatching (Hammerson 1982a, Nussbaum et al. 1983). Tadpoles overwinter in the Pacific Northwest, transforming during their second summer (Nussbaum et al. 1983, Leonard et al. 1993). The bullfrog is a voracious feeder, eating anything smaller than itself, including ducklings, fish, mice, frogs, and small turtles. Bullfrogs have been implicated in extirpations of native frogs and turtles, and declines in waterfowl production (Hammerson 1982b, Leonard et al. 1993). Native amphibians and hatchling turtles are rarely seen where once they were common at Lee Metcalf National Wildlife Refuge (P. Gonzales pers. comm.), while Bullfrogs are now abundant.

Surveying: Both tadpoles and adults can be sampled by using a dipnet. Capture success of adults is enhanced by night sampling using a headlamp, as they are very wary and do not allow close approach during the day.

Status: Bullfrogs are native to the eastern and central U.S. and exotic in western states. They were introduced into western Montana prior to the 1960's. In the BNF area, the species was first reported in 1966, although Black (1969) stated the species was introduced into the Bitterroot Valley about 1920. The Bullfrog appears to be restricted to the Bitterroot Valley along the Bitterroot River in Ravalli and southern Missoula counties (Appendix 3). There are no records from BNF lands, but the species may expand its range onto the Forest at lower elevations in the Bitterroot Valley.

Montana Natural Heritage Program rank: G5 SE3.

Rana pipiens -- Northern Leopard Frog

Occurrences on or near the Bitterroot National Forest, Montana



Northern Leopard Frog (*Rana pipiens*)

Description: Adults are brown or green with large, dark spots surrounded by light-colored halos on the sides and back. The dorso-lateral folds are usually lighter in color than the surrounding background. The under-side is typically white, but may be cream-colored or yellowish. The adult has a snout-vent length of 2-5". Newly transformed froglets may lack spots.

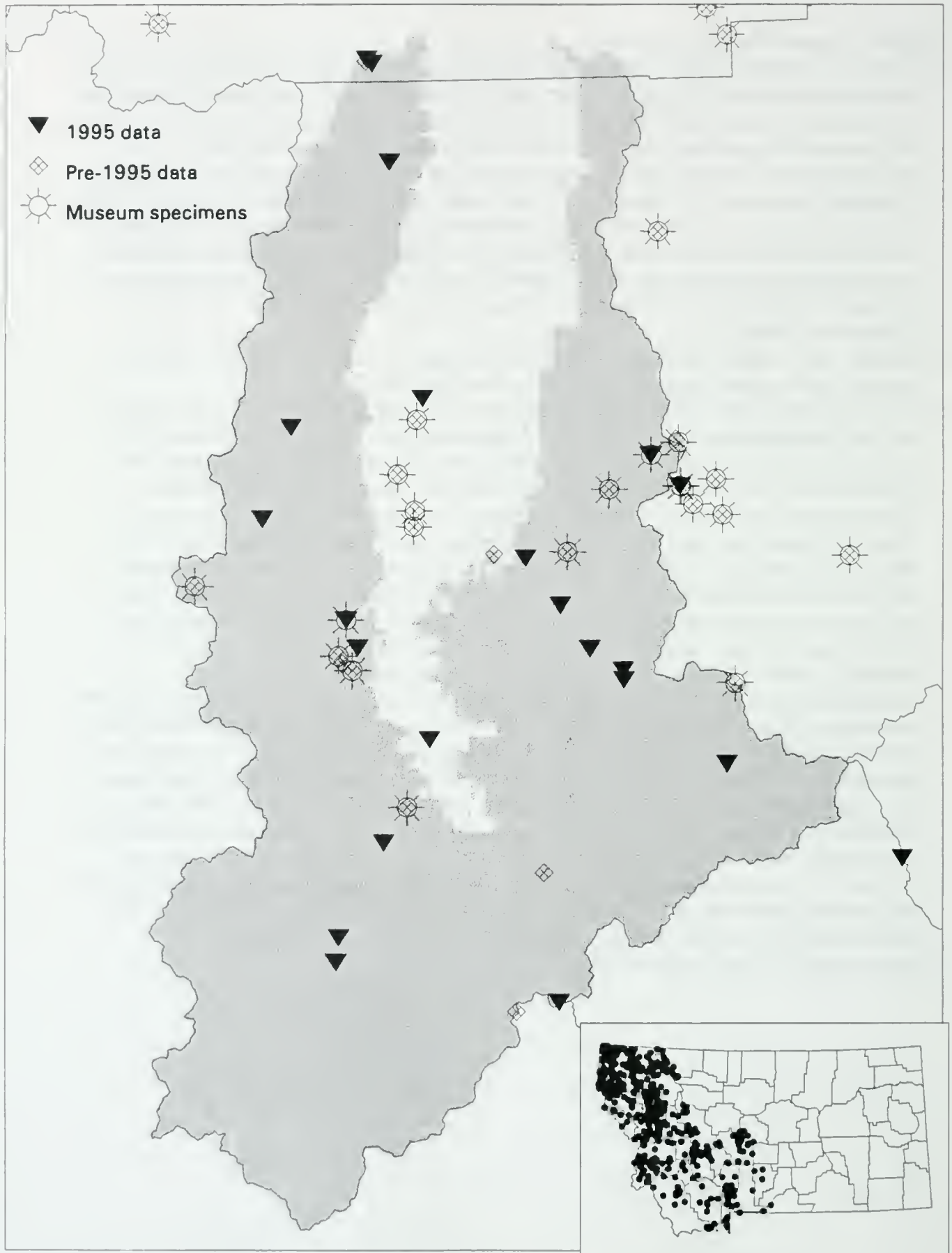
Habitat and Habits: Northern Leopard Frogs are found in or near water in non-forest habitats. Typically the vegetation is dense, e.g., a dense, sedge wet-meadow or cattail marsh. Breeding takes place in lakes, ponds (temporary and permanent), springs, and occasionally backwaters or beaver ponds in streams. Eggs are laid in 2-5" globular masses composed of hundreds to thousands of eggs (Hammerson 1982a, Nussbaum et al. 1983). In Colorado, eggs hatch in 4-15 days and tadpoles take 8-15 weeks to metamorphose, depending on water temperature (Hammerson 1982a).

Surveying: Both tadpoles and adults are seen in and along the water during the day and can be sampled with a dipnet; adults may also be captured by hand..

Status: Historically, the Northern Leopard frog was widespread in Montana but it now appears to have been extirpated throughout much of the western part of the state. Re-surveys of 14 known historical sites west of the Continental Divide during the past three summers have failed to reveal a single individual. A population was found at a new site near Eureka, Lincoln County, in 1995 (K. Werner pers. comm.), and two unconfirmed sites are reported from the Missoula area and the Flathead Reservation. No Northern Leopard Frogs were found on or near the BNF in 1995, which included visits to the two historical sites reported in the 1960's in the Bitterroot Valley. There are a number of large open marsh areas at lower elevations on private land which appear to be good habitat. It is interesting, nevertheless, that there are no historical records from the Missoula area where active collecting occurred during the 1950's-1970's. This suggests that the species may have been localized in distribution in this part of the state and never abundant. It is still common and wide-spread in southeastern Montana, but its status is uncertain in central and northeast Montana. It appears that only localized populations are present on the western edge of the plains. In many other areas in North America where the Northern Leopard Frog was common a few decades ago, it is now gone. Widespread extirpations are known from Alberta (Koonz 1993), Wyoming, Colorado (Hammerson 1982b, Corn and Fogelman 1984), Idaho (Groves and Peterson 1992), Washington, and Oregon (Leonard et al. 1993). Bullfrog and fish introductions, acid rain, ozone depletion, immune system suppression, and "Postmetamorphic Death Syndrome" have all been suggested as causes for frog extirpations in other areas (Corn and Fogelman 1984, Hammerson 1982b, Carey 1993, Leonard et al. 1993).

Montana Natural Heritage Program rank: G5 S4.

***Rana pretiosa* -- Spotted Frog**
Occurrences on or near the Bitterroot National Forest, Montana



Spotted Frog (*Rana pretiosa*)

Description: Adults are dark to light brown, gray, or olive green with dark spots (frequently with lighter centers) found on the back, sides and legs. The number and pattern of spotting is quite variable. The back and sides are often covered with small bumps. The underside of the legs is bright red, salmon, or orange. In younger subadults, bright leg color is often lacking and instead a light, lemon-colored wash is present. In subadults there is often a dark mask present, with a light jaw stripe extending to the shoulder. The adult has a snout-vent length of 5-10 cm. Younger individuals, without bright legs, may be distinguished by a combination of: 1) dorsal spots not surrounded by light-colored halos; 2) dorsolateral folds present; 3) toes without pads at the tips; 4) light, lemon-colored wash on undersides of legs; and 5) pale gray, not white, belly. Eggs are laid in large, globular masses of 150-500 at the surface of the water. The tadpoles are dark green on top with some gold flecking whereas the underside has an iridescent bronze color. Total length of tadpoles may reach 7 cm; the eyes are located on top of the head.

Habitat and Habits: Spotted Frogs are regularly found at the water's edge in forest habitats. Forested wetlands up to treeline are used for breeding, but populations are also found in the open inter-mountain valleys with suitable vegetation. Egg masses in a particular pond are often found in the same location at the pond margin. Because of their location, eggs are susceptible to drying up if pond levels recede substantially before tadpoles hatch out. Eggs hatch in 2-3 weeks and tadpoles take 2-14 months to metamorphose, depending on water temperature (Nussbaum et al. 1983, Turner 1958). In 1995 the Spotted Frog was encountered from 3400' in the Bitterroot Valley to over 7000' elevation in the Bitterroot and Sapphire mountains. Tadpoles 1.5-2.5 cm in length were found on 19 May 1995 at the monitoring pond (4350') near the mouth of Lost Horse Canyon; at this same site larger tadpoles were 6 cm in length on 16 June, and 7 cm in length (with well-developed hind legs) on 12 July. Single adults (7 cm snout-vent length), but no tadpoles, were seen at Carlton and Little Carlton lakes (7790' and 7740', respectively) on 1 September 1995. Adults (to 8.5 cm snout-vent length), two- and four-legged tadpoles (6 cm in length), and untransformed tadpoles were seen at Dam Creek Lake (7310') on 31 August. Following dispersal, young and adult frogs are usually found not far from open water.

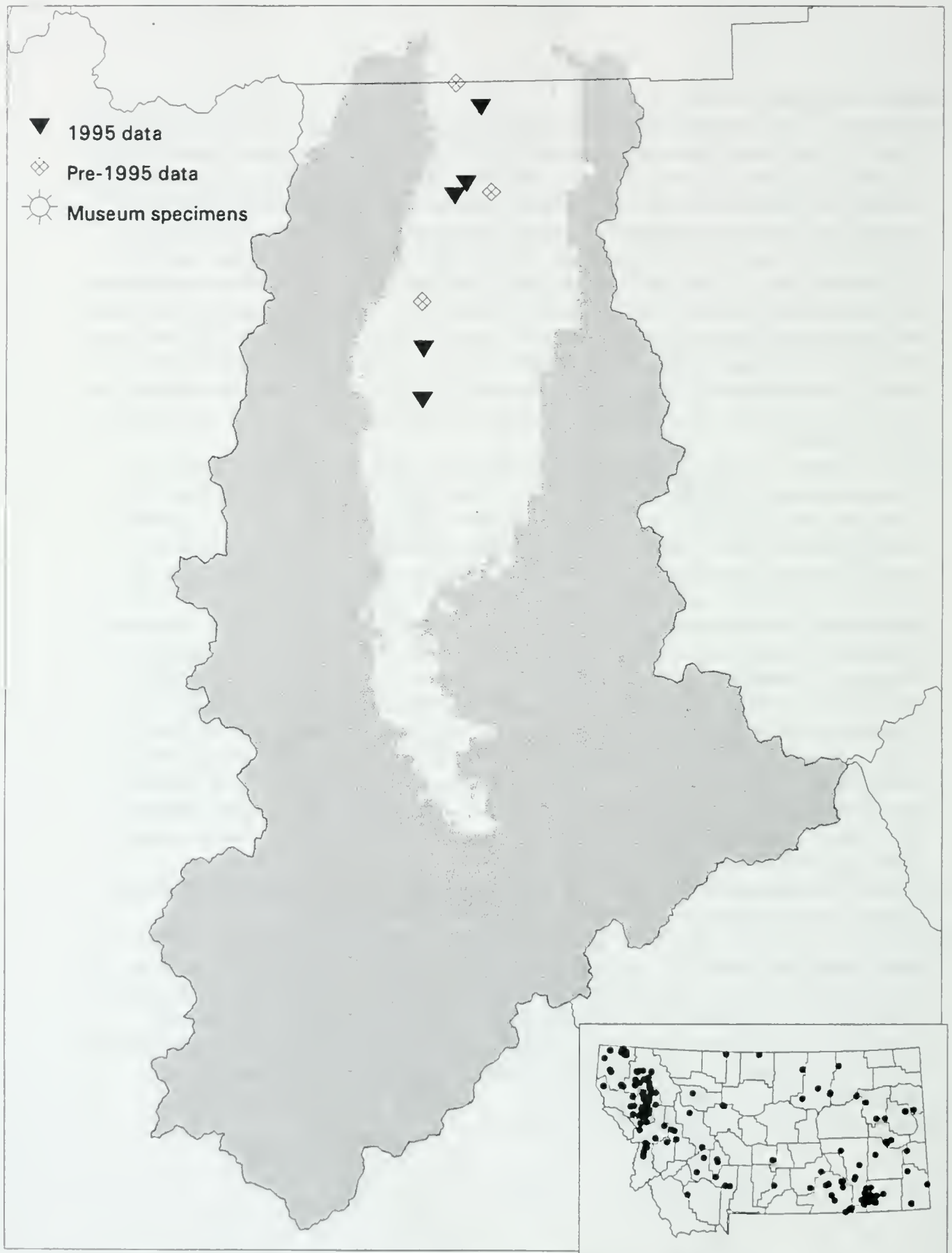
Surveying: Both tadpoles and adults can be seen in and along the water during the day and can be sampled with a dipnet; adults may also be captured by hand.

Status: The most common frog on the BNF and elsewhere in western Montana; this species was found on all Districts in 1995 (Appendix 3), although there are few reports from the East Fork of the Bitterroot River in the Sula District. The Spotted Frog in Montana was a USFWS Candidate (C2C1) species, and is on the Heritage Program "Animal Species of Special Concern" list. Significant declines are evident in western Washington, Oregon, and northern California populations, but recent research (Green et al. 1996) indicates that those populations may be a different species.

Montana Natural Heritage Program rank: G4 S4.

Chrysemys picta -- Painted Turtle

Occurrences on or near the Bitterroot National Forest, Montana



Painted Turtle (*Chrysemys picta*).

Description: Adult Painted Turtles have a relatively flat dorsal shell, or carapace, the length of which varies from 12.5-20 cm. The background color of the shell ranges from dark brown to green, with a narrow yellow line extending down the center. A series of short, irregular yellow lines are often scattered across the shell, and a red and black border forms the outer edge. The ventral shell, or plastron, is red with a centrally-located yellow and black blotch whose edges flare out along the border of the scutes. The edge of the plastron also has a series of black and yellow blotches. Two yellow stripes run along the sides of the head and neck. Sexes are distinguished by the longer tail and longer front claws of the male. The white, soft-shelled eggs are about 2.5 cm in diameter and number 12-20 per clutch.

Coloration on young Painted Turtles is more vibrant and the shell is not quite as flattened.

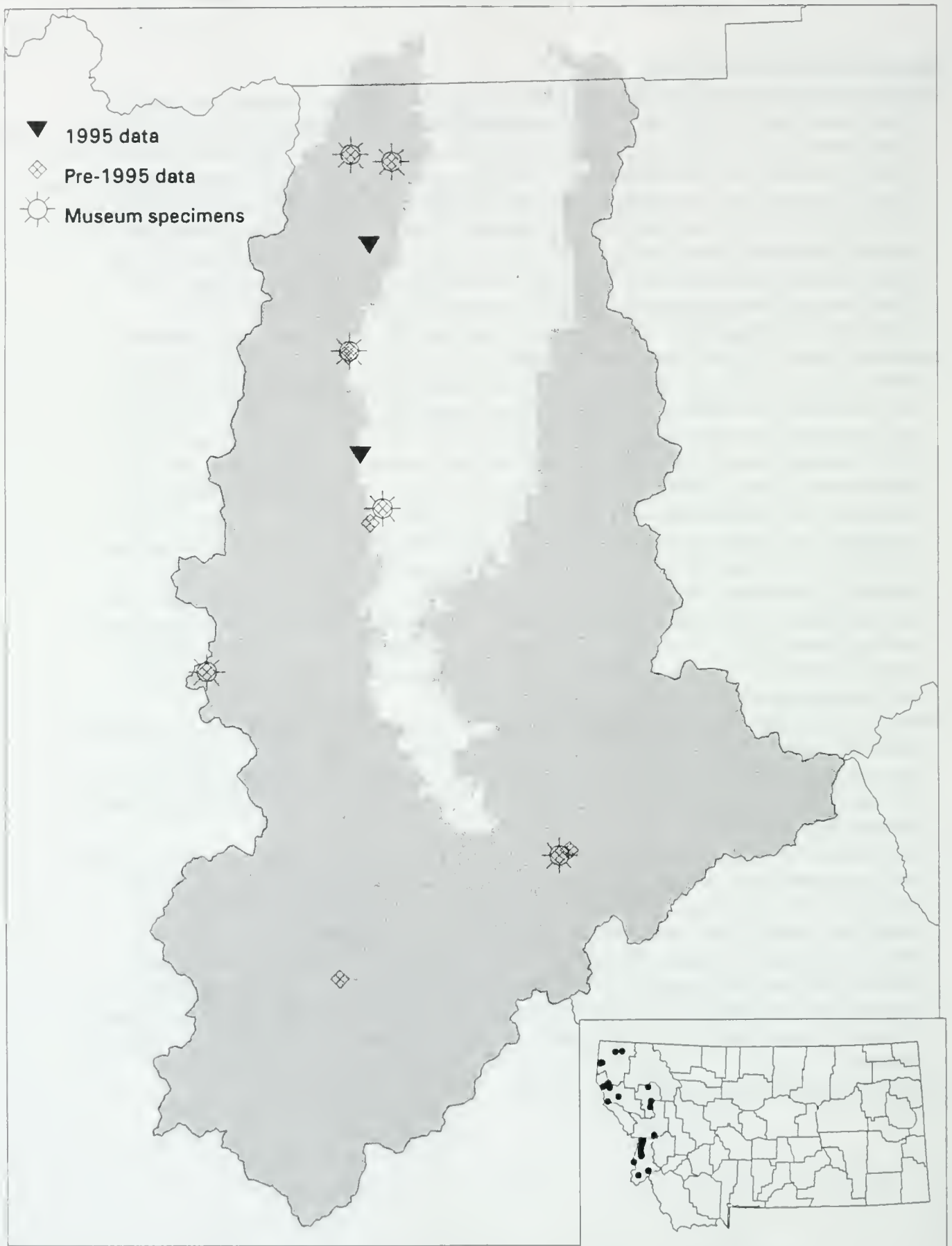
Habitat and Habits: Painted Turtles are rarely seen far from ponds, lakes, or the slow-moving water of streams. They are primarily herbivorous, feeding on a variety of aquatic plants, but will also scavenge on animal remains. Eggs are usually laid within 10-20 feet of the water's edge, although some individuals will travel greater distances seeking a suitable site. During egg-laying, the female excavates a hole with her hind feet and deposits the eggs, which are then covered by several inches of dirt. Predation on turtle eggs by raccoons, skunks, etc. is common, and shell fragments are evidence of such activity. Female Painted Turtles may lay more than one clutch of eggs each summer. It is suspected that the young borne of late egg depositions overwinter in the shell and do not emerge until the following spring. Once females lay their eggs, they return to the pond, where they can often be seen basking on logs or rocks along with juveniles and males. Painted Turtles sexually mature at 3-4 years of age and may live to be 10 years or older (Stebbins 1985). Painted Turtles have been reported from 10 June to 14 August in the BNF area, but the period of time these turtles are surface-active is undoubtedly longer than this.

Surveying: Although various turtle traps can be used for surveys, visual identification is suitable since there are no other turtle species in Western Montana to confuse it with. A pair of binoculars is helpful and surveys should be done on warm sunny days. During cold or cloudy weather, turtles tend to remain underwater for long periods and can be missed on just a walk-through survey.

Status: Painted Turtles are common throughout northwestern Montana at lower elevations. They were encountered at five sites in 1995, all adjacent to the Stevensville District. In the BNF area this species appears to be restricted to the lowlands of the Bitterroot Valley north of Hamilton; currently there are no records from BNF lands. Painted Turtles are commonly seen at Lee Metcalf National Wildlife Refuge and other marshes along the Bitterroot River. In these areas they face threats from Bullfrogs, which attack hatchlings, and mammalian predators (e.g., skunks and raccoons), which excavate and destroy clutches (P. Gonzales pers. comm.). Painted Turtles are probably more widespread in the BNF area than current records indicate.

Montana Natural Heritage Program Rank: G5 S5.

***Elgaria coerulea* -- Northern Alligator Lizard**
Occurrences on or near the Bitterroot National Forest, Montana



Northern Alligator Lizard (*Elgaria coerulea*).

Description: One of two lizard species in western Montana, the Northern Alligator Lizard is a member of the Anguidae family. The family is characterized by having elongate bodies, relatively short limbs and a lateral skin fold on each side of the body. Adult Northern alligator lizards range from 9-14 cm in snout-vent length. The head is broader and more triangular in males than females. The eyes have considerable black pigment. Although most species of *Elgaria* have distinct black and brown bands running across the dorsal surface, the bands are broken and indistinct in the Montana specimens. The ventral surface has a series of longitudinal dark lines located at the scale junctions. Females give birth to 2-15 living young (Stebbins 1985), which have a more distinct banding pattern on the dorsal surface than the adults.

Habitat and Habits: The Alligator Lizard is found in a variety of habitats, including under logs in dry open forests, near streams in moist, cool forests, and around buildings. They have been seen in rocky, open Ponderosa forests in all BNF Districts, usually below 6000' elevation in the Bitterroot Mountains. The two sightings in 1995 were of single animals in talus slopes at Blodgett Canyon on 10 May, and near McCalla Creek on 20 June. Little is known about reproduction in this part of their range; it is assumed that they mate in spring and that the young are born in late summer. They are primarily carnivorous, feeding on a variety of small insects and other invertebrates.

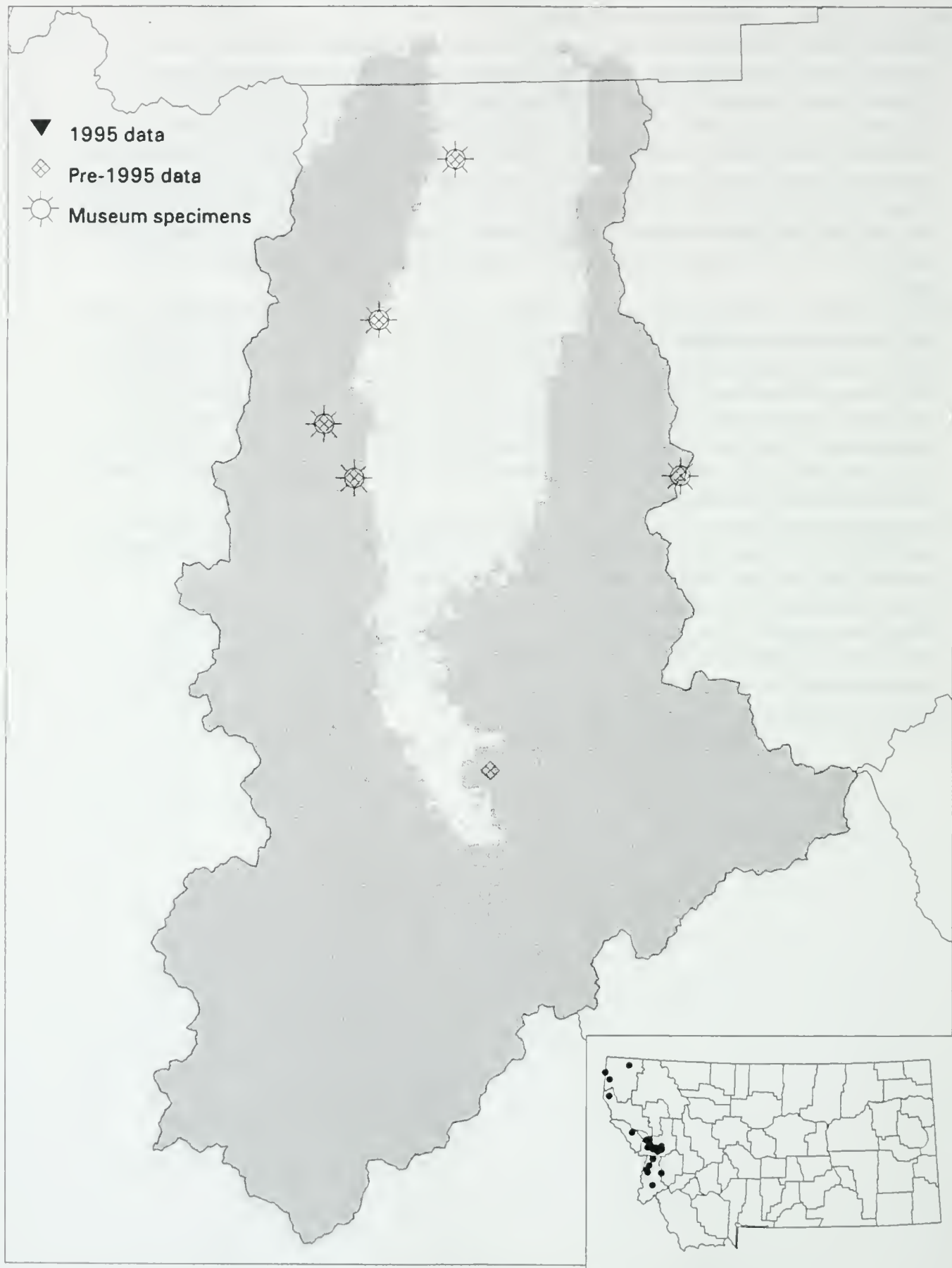
Surveying: Although various lizard traps and mark/recapture techniques have been designed, probably the best approach is to visit known sites, especially on warm, sunny days, and allow considerable time just to sit and watch the area for activity.

Status: Records exist for all Districts of the BNF, but there remain few records from the Sapphire Mountains. The Northern Alligator Lizard is probably more widespread and abundant on the BNF than current data indicate. Given the paucity of sightings, it is recommended that all sight records be reported to the Heritage Program and kept on file.

Montana Natural Heritage Program Rank: G5 S3.

Eumeces skiltonianus -- Western Skink

Occurrences on or near the Bitterroot National Forest, Montana



Western Skink (*Eumeces skiltonianus*).

Description: The second of western Montana's two lizard species, the Western Skink is smaller (5 - 9 cm snout-vent length) than the Northern Alligator Lizard and is characterized by round, shiny scales and an elongate head. The color pattern in adults consists of a broad, brown stripe edged with black, running lengthwise down the back. The brown band is paralleled by a light and then dark band on each side of the body. The stripes extend onto the head but fade on the tail. The Western Skink is thought to lay 2-6 eggs (Stebbins 1985), but the exact number and dates of oviposition are not known in this area. In young animals, the tail is bright blue but the color fades with age. The Western Skink is in the Scincidae family.

Habitat and Habits: Western Skinks are found in habitats similar to those of the Northern Alligator Lizard, i.e. cool, moist forests, often along streams, and more mesic open slopes. They may be seen sunning themselves in open areas. Although diurnal in habits, skinks are secretive and not often seen. Where they have been studied, females guard the eggs until hatching. Nothing is known about the reproductive habits and demographics of this species in Montana. Western Skinks were not encountered during the 1995 survey in the BNF area, although they were reported near Blue Mountain (at 3700') SW of Missoula on 7 May (C. Odegard pers. comm.), and N of Frenchtown during early summer (S. Schlang pers. comm.); both areas are in Missoula County. The few records suggest it occurs mostly below 6000' elevation.

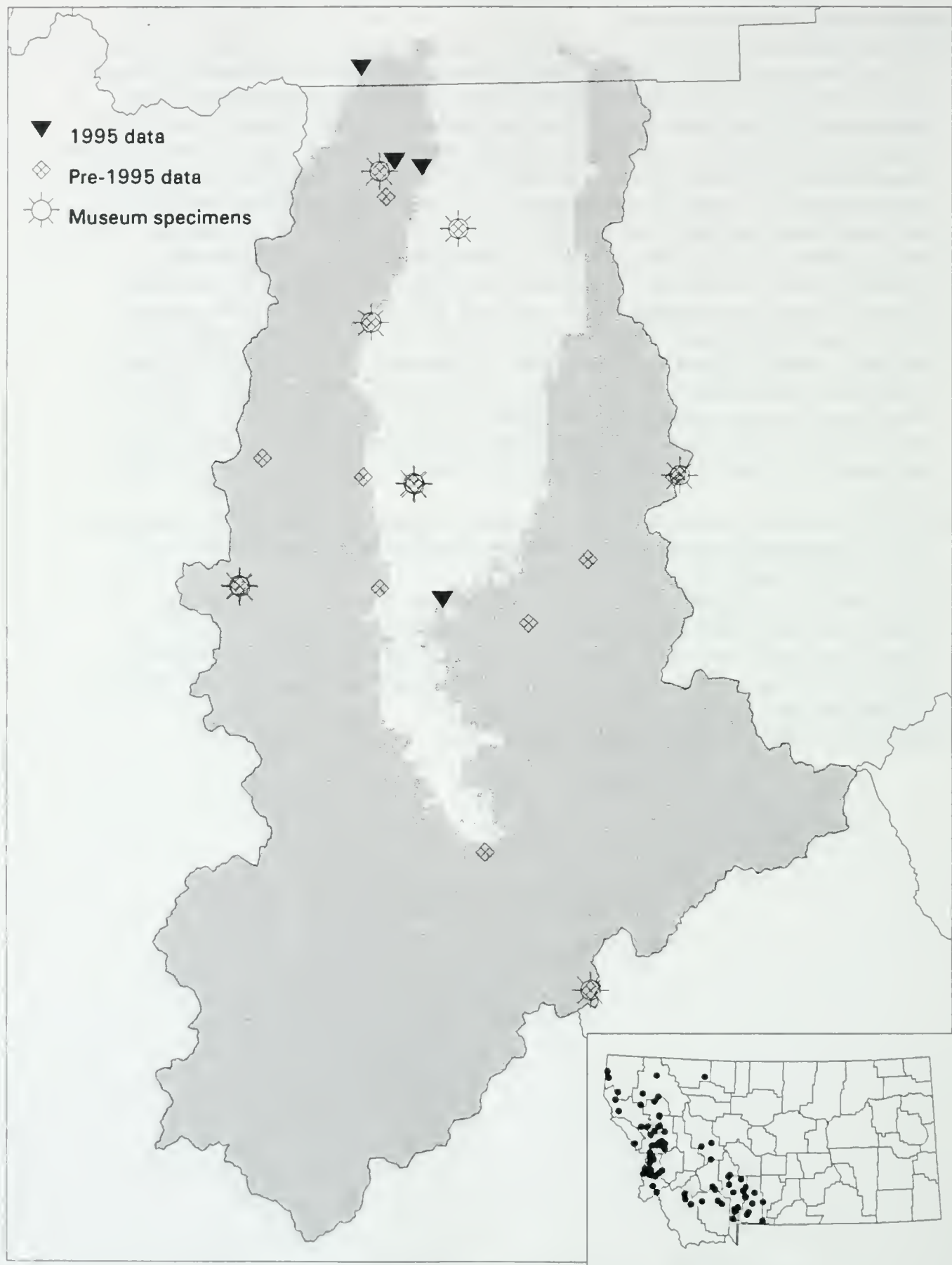
Surveying: Large drop cans or lizard traps can be used for sampling but like the Alligator lizard, the best opportunity for seeing skinks is probably to visit known sites during warm sunny days and allow considerable observation time.

Status: Distribution in the BNF is unknown, although the few records are widely scattered. Six sightings of skinks have been reported in the BNF area, from the Stevensville and Darby districts; only one of these has been since 1984 (at 5600' in Robbins Gulch in the Darby District on 30 August 1994). It is recommended that all sightings be reported to the Heritage Program and kept on file.

Montana Natural Heritage Program Rank: G5 S3?.

Charina bottae -- Rubber Boa

Occurrences on or near the Bitterroot National Forest, Montana



Rubber Boa (*Charina bottae*).

Description: The Rubber Boa looks and feels like rubber, hence its name. It is a small snake (30-70 cm snout-vent length), stout, and uniformly-colored from brown to green on the dorsal side. The ventral surface is cream to tan in color. The scales are small and smooth, except for those on the head which are enlarged. The tail is short and blunt. Two to eight young are born alive. Young Rubber Boas are more tan (or even pinkish) than the adults on both the dorsal and ventral surfaces.

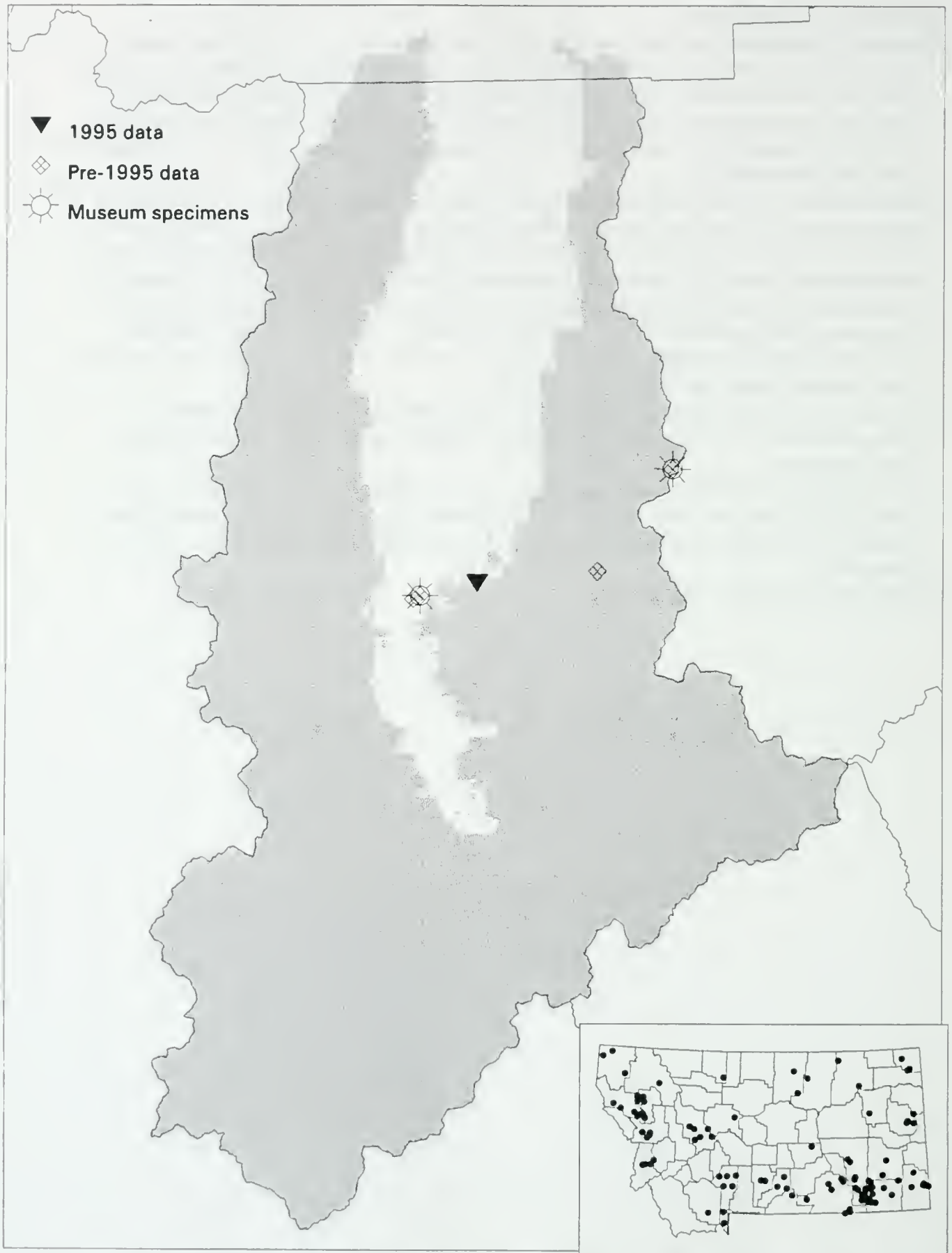
Habitat and Habits: The Rubber Boa is a secretive snake, usually found under logs and rocks in either moist or dry forest habitats. Occasionally they are seen sunning themselves on roads, trails or in open areas. Rarely are they seen in marsh or bog situations. In the BNF area they are most often reported in June and July on mountain trails, generally below 7000' elevation. Surface activity in the BNF area has been reported from 22 March to 3 October, the extreme dates from elevations below 4000' in the Bitterroot Valley. They will constrict small prey (i.e. shrews, small mice, salamanders, etc.) but also feed on various insects and invertebrates. The young are born in late summer or early fall.

Surveying: There are no practical methods for surveying other than systematic searches of a given area rolling over rocks, logs, etc. Previous sightings are of value in locating general areas of activity.

Status: Sightings of Rubber Boas are infrequent; they were reported from the BNF area four times in 1995, from the Stevensville and Darby districts. There are, as yet, no reports from the West Fork District, but Rubber Boas probably occur throughout the BNF at low to mid-elevations.

Montana Natural Heritage Program Rank: G5 S4.

Coluber constrictor -- Racer
Occurrences on or near the Bitterroot National Forest, Montana



Racer (*Coluber constrictor*).

Description: A slender, but moderately long snake, the adult Racer ranges from 40-163 cm in total length. Adult coloration is uniform across the dorsal side but it can vary from a greenish-gray to brown or blue. The ventral side is whitish to pale yellow, the latter color extending onto the upper labials and nasal region of the head. The eyes are relatively large. The scales are smooth and the anal plate is divided. A clutch of 3-7 eggs is laid in the summer (Stebbins 1985). Young snakes (up to about 40 cm) have a much different coloration than the adults consisting of a series of dorsal brown blotches edged with black which run the length of the animal. A row of blotches is also found on each side of the animal extending onto the ventral side.

Habitat and Habits: The Racer is associated with more open habitats either in shortgrass or forested areas. It preys on mice, frogs, insects, bird eggs and nestlings, and the like. There are few records of this species in the BNF area, mostly from below 5000' elevation. Surface activity has been noted from 27 April to 17 September. The single adult seen in 1995 (on 31 August) measured 42 cm total length.

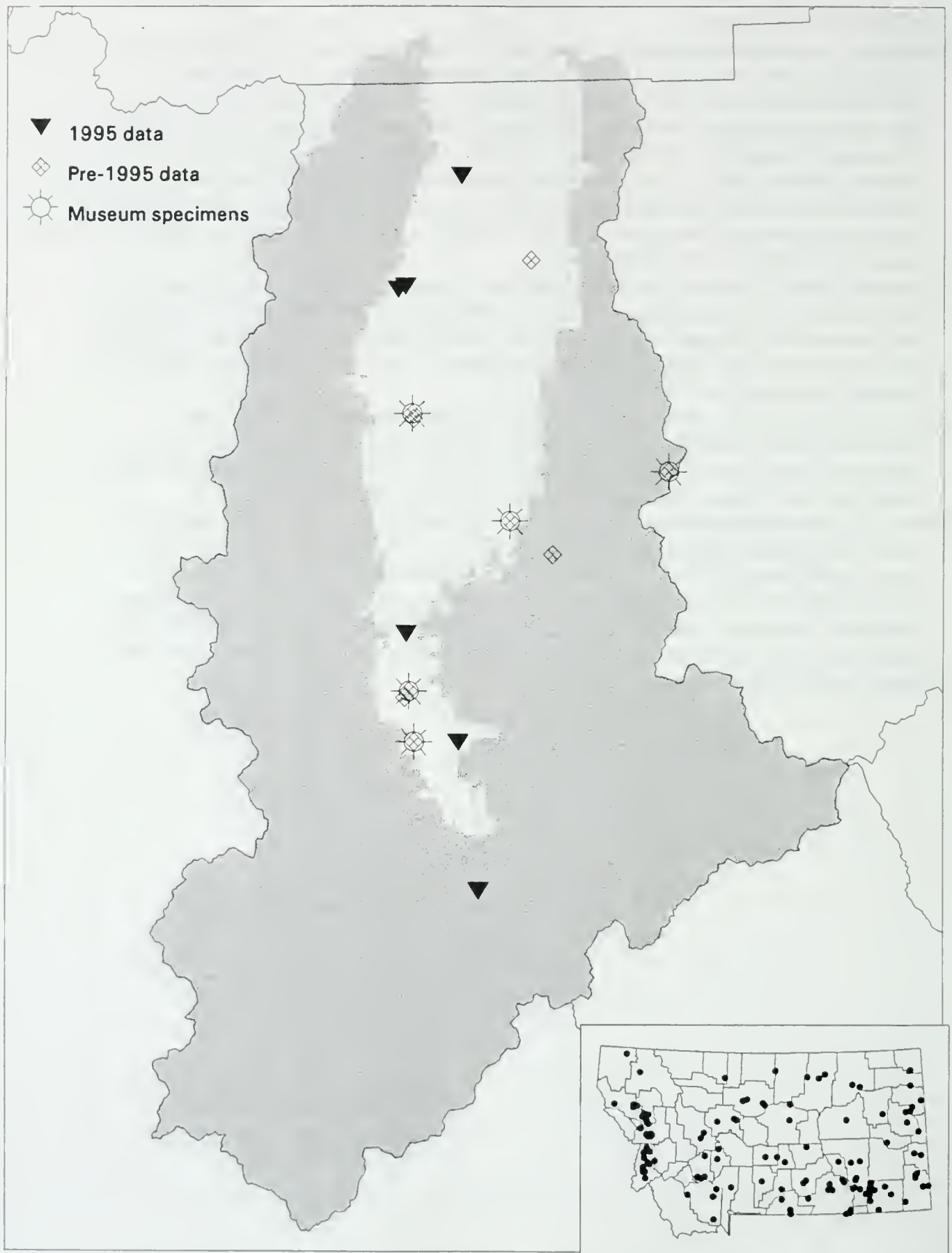
Surveying: Walk-through surveys coupled with mark-recapture methods offer the best opportunity for determining population status. Rolling over rocks and logs and timing surveys for warm sunny days enhances sampling success. Road surveys on warm evenings are a good way to sample for snakes that warm themselves on the road surface.

Status: The Racer has been reported only five times in the BNF area, all from the Skalkaho Creek and Sleeping Child Creek drainages on the Darby District. The five records span more than 60 years (1932-1995), suggesting that reproduction is sufficient to maintain a viable population. It is a mystery why this snake is not reported from more areas, as there appears to be suitable habitat many places around the Bitterroot Valley. It should be looked for in more open mesic sites (especially near water), and any sightings should be reported.

Montana Natural Heritage Program Rank: G5 S5.

Pituophis catenifer -- Gopher Snake

Occurrences on or near the Bitterroot National Forest, Montana



Gopher Snake (*Pituophis melanoleucus*).

Description: Montana's largest snake, adult Gopher Snakes (also called Bullsnares or Pine Snakes) can reach a total length of 210 cm, but most specimens we have seen in western Montana ranged between 90-150 cm. They are readily recognized by a series of large black to brown blotches which run down the back, and another series along the sides. The blotches, which are set on a yellow background, become more spaced out towards the tail. The dorsal scales are keeled. There is usually a black band on the head located in front of and extending below the eyes. The ventral coloration is yellow to white, often spotted with black, and the anal plate is undivided. Young Gopher Snakes can be confused with young Racers which also have the alternating black blotches, however the Racers have a black border on the dark blotches, the scales are not keeled, and the anal plate is divided. Gopher Snakes lay between 2-24 eggs during the summer months (Hammerson 1982a), and the young resemble the adults in coloration.

Habitat and Habits: Gopher Snakes are associated with more arid habitats, including open pine forests. They feed on rodents, rabbits and ground dwelling birds, and to a lesser extent on frogs, toads, etc., found around stock ponds and other wetlands. They have a habit of hissing and vibrating the tail when alarmed, often sounding like rattlesnakes. They occasionally climb trees, hence the common name "Pine snake." Little is known about the biology of this species in Montana. Most records for the BNF area are at elevations below 5000'. Surface activity in the BNF area has been reported between 2 May and 25 September; most sightings are from June-August. Individuals measured in 1995 were 105-120 cm in total length.

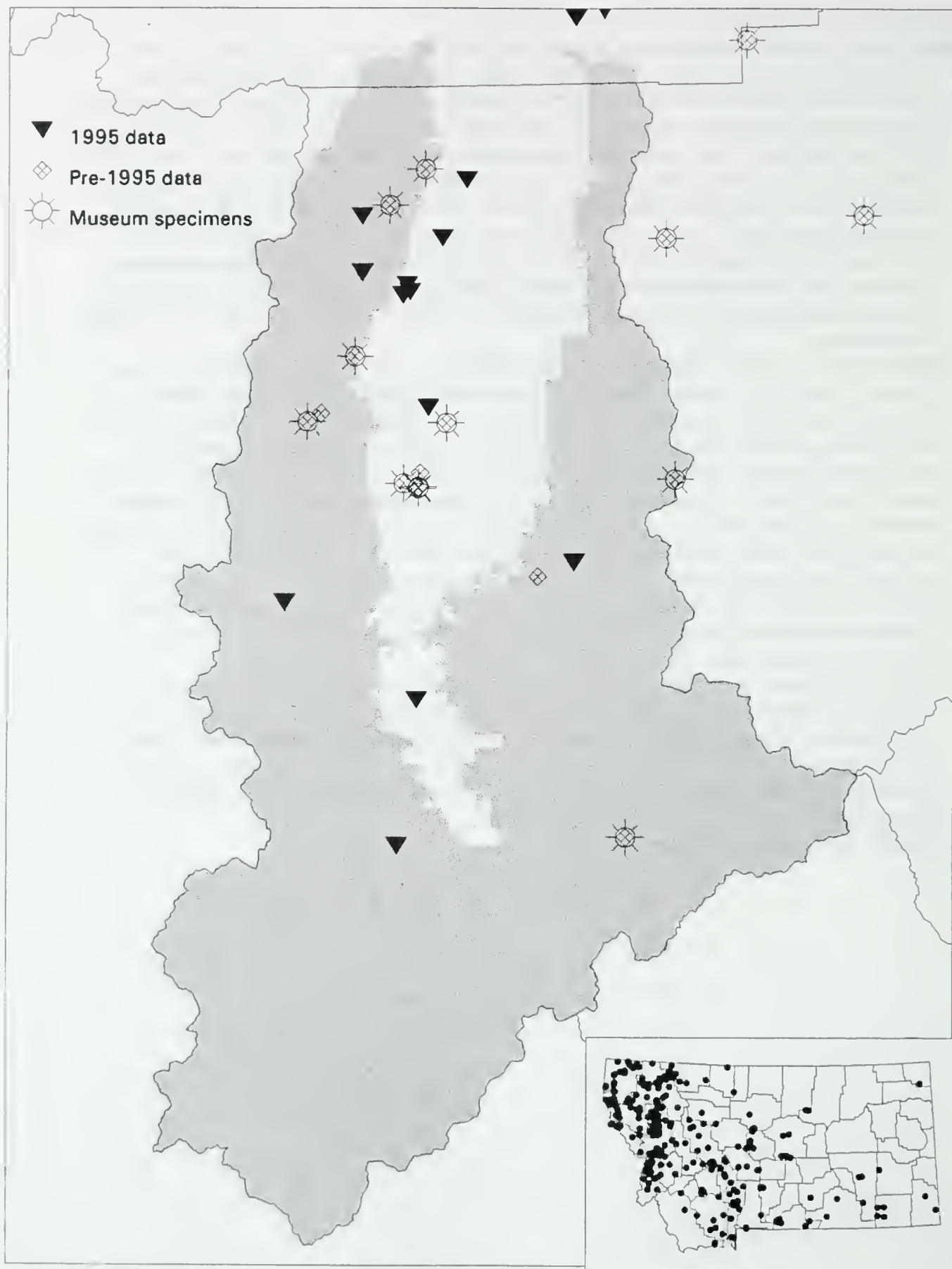
Surveying: Walk-through surveys, done on a regular basis in warm, sunny weather probably give the best results. Rocks and logs should be overturned (and replaced) when surveying. Data can be enhanced by mark-recapture techniques. Roads can be driven slowly while looking for basking individuals or roadkills.

Status: Gopher Snakes in the BNF area are known from the Stevensville, Darby and Sula districts; this species was reported from each of these districts in 1995. Individuals actually on Forest Service lands have been reported only from the Darby and Sula districts. Most records in the area are from the Bitterroot Valley. However, the more arid portions of the Forest are capable of having Gopher Snakes. It is recommended that any valid sighting be kept on file and reported to the Heritage Program.

Montana Natural Heritage Program Rank: G5 S5.

Thamnophis elegans -- Western Terrestrial Garter Snake

Occurrences on or near the Bitterroot National Forest, Montana



Western Terrestrial Garter Snake (*Thamnophis elegans*).

Description: Adult Western Terrestrial (or Wandering) Garter Snakes are smaller in body size than the Common Garter Snake, their snout-vent length varying from 40-70 cm. Three yellow longitudinal stripes are present (one dorsal, two lateral), but the dorsal stripe is much narrower than that of the Common Garter Snake. A distinctive feature of the Western Terrestrial Garter Snake is a series of alternating black spots which run the length of the body between, and somewhat on, the yellow stripes. The background color between the stripes tends to be more gray compared to the dark brown found in the Common Garter Snake. The ventral surface has a series of dark black/brown blotches which may cover most of the surface. The dorsal scales are keeled and there are normally 8 upper labial scales. Females give birth to 4-19 young during the summer (Stebbins 1985). The coloration of young snakes is similar to that of the adults.

Habitat and Habits: The habitat and habits of the Western Terrestrial Garter Snake are similar to the Common Garter Snake, i.e., they are found in most habitats but are particularly common around wetlands. Most records from the BNF area are below 5000' elevation. The highest elevation noted during the 1995 survey was 6400' on the St. Mary Peak road on 10 August, but this species could occur up to treeline in appropriate habitat. Individuals have been encountered between 27 April and 26 October in the BNF area. Young snakes (25-35 cm total length) were seen between 22 May and 31 August in 1995; the larger individuals measured in 1995 were 50-55 cm total length.

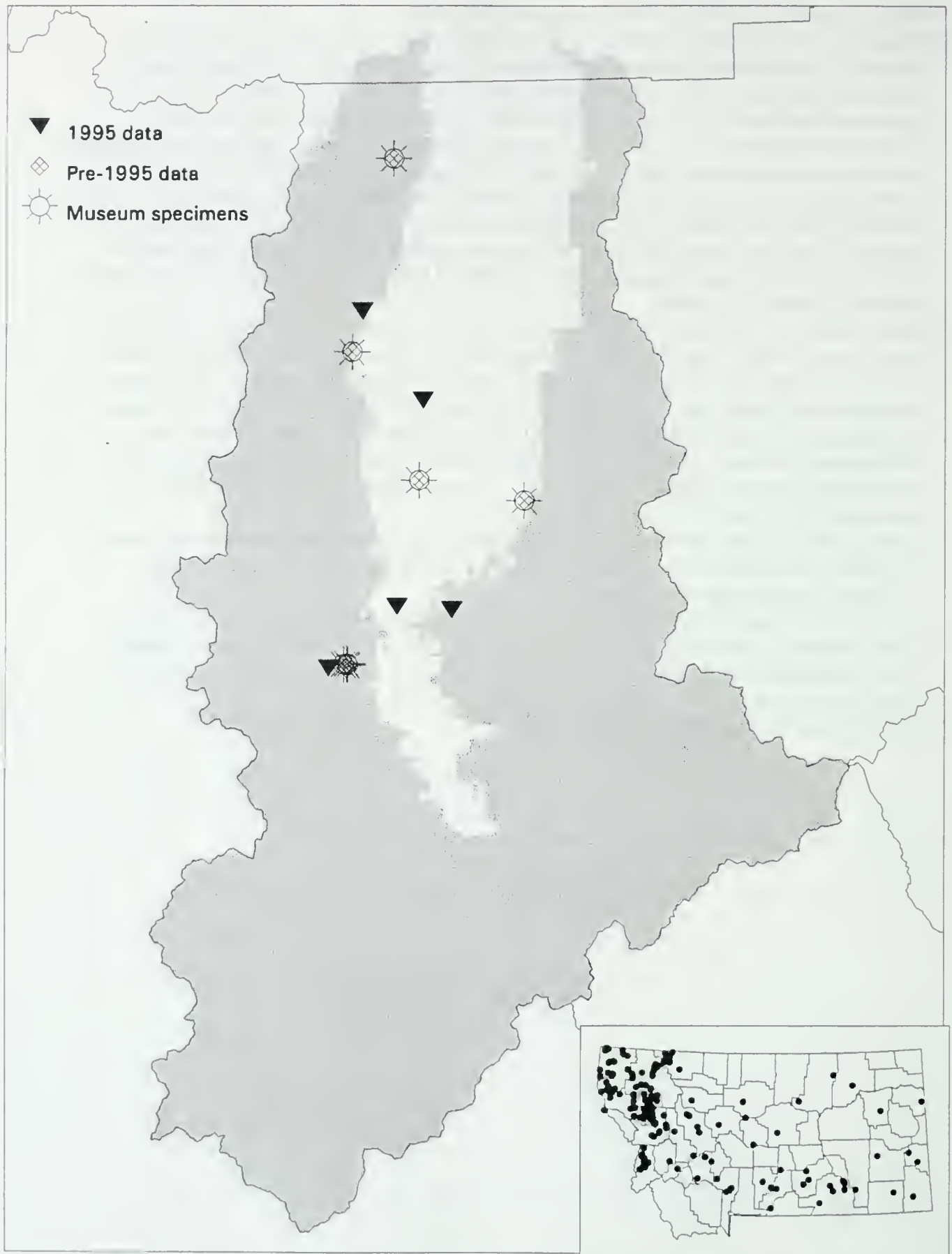
Surveying: Surveys using mark-recapture techniques or sight surveys can be conducted in areas of higher concentrations around marshes and bogs. Roads can be driven slowly while looking for basking snakes or roadkills.

Status: Western Terrestrial Garter Snakes have been found on all districts of the BNF; during 1995 the species was reported from all but the Sula District. This snake species is probably more widespread and abundant than current documentation indicates. Sightings, especially from higher in the mountains, should be reported.

Montana Natural Heritage Program Rank: G5 S5.

Thamnophis sirtalis -- Common Garter Snake

Occurrences on or near the Bitterroot National Forest, Montana



Common Garter Snake (*Thamnophis sirtalis*).

Description: The Common Garter Snake consists of two subspecies in western Montana, both ranging from 40-105 cm in snout-vent length. Both subspecies have three yellow longitudinal stripes: one located dorsally and one on each side. Between the yellow stripes is a black stripe, broken with red spots in *T. s. parietalis* but not in *T. s. fitchii*. Ventral coloration varies from yellow to bluish, and some individuals of the red-sided subspecies have small black spots on the edge of the ventral scales. The dorsal scales are keeled, and normally there are 7 upper labial scales. The Common Garter Snake is a live-bearer giving birth to 12-18 young during the summer (Hammerson 1982a). Young garter snakes have approximately the same coloration as the adults.

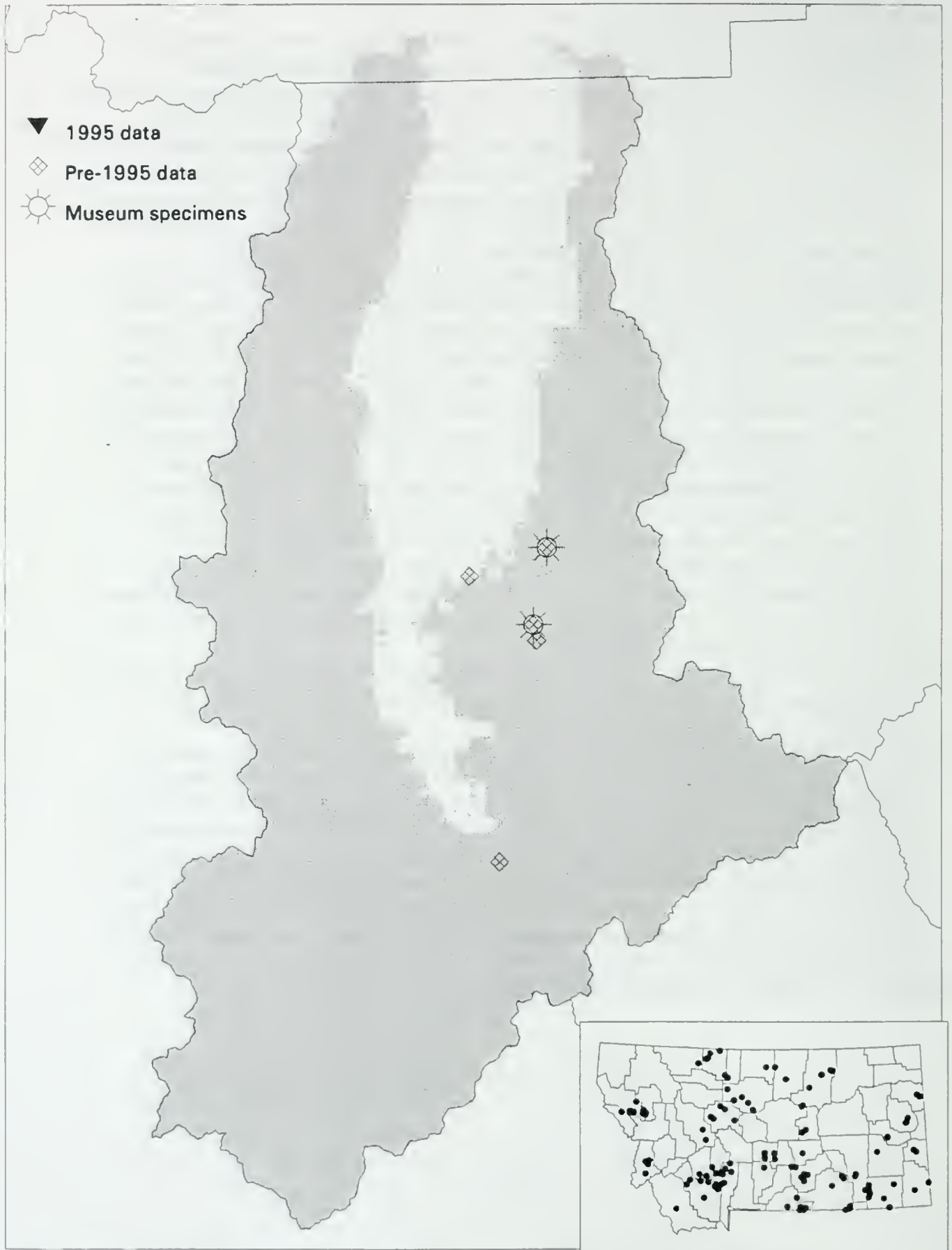
Habitat and Habits: Common Garter Snakes are found in all forest habitats but more so at lower elevations around marsh-bog-pond situations where they prey on young fish, frogs, toads, mice and invertebrates. They are sometimes confused with water snakes because of their frequent aquatic exploits, but there are no water snakes in Montana. Typical of most garter snakes, they emit a noxious secretion when handled and can be aggressive when disturbed. Common Garter Snakes are capable of biting, but their teeth are rarely long enough to break the skin. Common Garter Snakes were found between 3500-4400' elevation during the 1995 survey, but probably occur at higher elevations than this. Four individuals were found together along Sweathouse Creek (4350') on 17 June; three were 30-35 cm and one was 70 cm in total length. Other individuals measured in 1995 were 45-55 cm in total length. Individuals have been encountered in the BNF area from 19 March to 26 October. In Wyoming, the Common Garter Snake is replaced at higher elevations by the Western Terrestrial Garter Snake (Baxter and Stone 1985). Garter snakes eat a variety of vertebrates and invertebrates, with the Common Garter Snake concentrating more on amphibians than the Western Terrestrial Garter Snake.

Surveying: Approximate numbers around marsh-bog habitats can be estimated based on a mark-recapture approach, or sight surveys, if done on a regular basis and under warm, sunny conditions.

Status: The Common Garter Snake appears to be less common than the Western Terrestrial Garter Snake in the BNF area; it has been reported 13 times from only the Stevensville District and Darby District areas, where this species was again found in 1995. This species is probably more abundant and widespread than the current reports indicate, as five of the 13 records were made during 1995. Several reports from the Lake Como area indicate that there has been a viable population there for several decades (records from around the lake span 1932-1995). This species should be looked for at higher elevations in the mountains, and in the West Fork and Sula districts; encounters should be documented (to distinguish it from the Western Terrestrial Garter Snake), reported to the Heritage Program, and kept on file.

Montana Natural Heritage Program Rank: G5 S5.

Crotalus viridis -- Western Rattlesnake
Occurrences on or near the Bitterroot National Forest, Montana



Western Rattlesnake (*Crotalus viridis*).

Description: Rattlesnakes belong to the pit-viper family, Crotalidae, which have a heat-sensing pit located between the nostril and the eye. The fangs are hollow and hinged, allowing them to be folded back against the roof of the mouth. The head is triangular in shape, the front of which is blunt-nosed. The eyes are slightly elevated. There are several white lines which run along the side of the head. Adult Western Rattlesnakes have a narrow neck but a stout body with total length ranging from 37-112 cm. The dorsal background color varies from pale green to brown with a series of brown or black blotches edged with a dark and then light line extending the length of the body. The blotches often merge into rings on the tail. There are also blotches on the sides of the body. The ventral side is pale yellow to white and without blotches. The scales are keeled. The tail ends in a rattle which helps to warn potential predators of the snake's presence. Females give birth to 4-21 young during the summer; the young have the same color pattern as the adults (Hammerson 1982a)

Habitat and Habits: The Western Rattlesnake is an inhabitant of more open and arid country but it is also found in Ponderosa pine stands or mixed grass-coniferous forests. It is more likely to be encountered on south-facing slopes and areas of rock outcrops. Western Rattlesnakes may den in large numbers, moving up to 10 miles out from the dens during the summer (Peterson, pers. comm.) Dates of encounters on the BNF range from 1 July to 11 August. Undoubtedly the period of surface activity on the Forest is greater than this. In Wyoming, it is found at elevations of over 8500' (Baxter and Stone 1985), but BNF records are from below 5000'. Western Rattlesnakes prey on a variety of animals including mice, ground squirrels, rabbits, amphibians, and other snakes.

Surveying: Walk-through surveys on warm sunny days, including rolling over rocks and logs is probably the best method for determining relative numbers. Mark-recapture methods can be done to determine more precise numbers. Roads can be driven slowly at night while looking for basking or roadkilled individuals.

Status: The Western Rattlesnake was not encountered during the 1995 survey of the BNF. There are but five records for the BNF, all from the Darby and Sula districts low in the Sapphire Mountains. However, the records span 1932-1994, and the species is probably more abundant and widespread than indicated by the paucity of records. It is feared and often needlessly killed due to its poisonous bite. The habit of denning at traditional sites in large numbers makes rattlesnakes vulnerable to commercial collecting or simply killing by fearful people. Any den sites should be carefully documented and protected. Encounters with this species should also be documented, reported to the Heritage Program, and kept on file.

Montana Natural Heritage Program Rank: G5 S4.

Species Potentially Present on the Bitterroot National Forest

Idaho Giant Salamander (*Dicamptodon aterrimus*, formerly part of *D. ensatus*)

Description: Adults have light tan or bronze marbling on a dark brown or black background.

The adult is heavy-bodied, with a large head and muscular legs; snout-vent lengths vary from 8-20 cm. Like all salamanders, it has smooth moist skin without scales. Adult Idaho Giant Salamanders can be distinguished from other Montana species by a combination of: 1) large size and muscular legs; 2) marbled pattern; and 3) lack of a tubercle on the hind feet. Larval Idaho Giant Salamanders are identified by their short, bushy, external gills, large size, dorsal fin starting at or behind the rear limbs, and stream dwelling habitat. In contrast, other larval salamanders found in Montana live in ponds, have long, feathery gills, and have a dorsal fin originating far forward of the rear legs. This species was formerly the Northern Rocky Mountain form of the Pacific Giant Salamander (see Nussbaum *et al.* 1983).

Habitat and Habits: Transformed adults are seldom seen, but live in moist coniferous forests.

They may be found under logs, bark, or rocks, and are seen most often moving about on warm rainy nights. Larval Idaho Giant Salamanders are found in swift, cold mountain streams but may occasionally be found in lakes or ponds. Little is known about their reproduction; Idaho Giant Salamanders may become sexually mature and breed while still retaining external gills.

Surveying: Larvae can be seen in pools or slow-water of streams at night and can be sampled with a dipnet. During the day, larvae may be captured by putting a net across a stream and moving logs, rocks, or other hiding places just upstream from it. Adults may occasionally be found in and under logs on the forest floor. Since they move around at night, particularly when it is warm and rainy they may be captured by either night searches or pitfall traps.

Status: Idaho Giant Salamanders are not known with certainty in western Montana (two unverified sight records exist from Gilt Edge Creek and Big Creek in Mineral County), but they are found on the Idaho side of the Bitterroot Mountains in Idaho County (Nussbaum *et al.* 1983). Higher mountain streams, ponds and lakes along the Bitterroot Mountains Divide should be searched for this species; if encountered, voucher specimens should be collected and all observations should be thoroughly documented, reported to the Heritage Program, and kept on file.

Montana Natural Heritage Program rank: G4 S1?

Ranger District Information

Stevensville District: Thirteen of 17 total species of amphibians and reptiles in the BNF area have been reported for this District; only Pacific Chorus Frog, Northern Leopard Frog, Racer, and Western Rattlesnake have yet to be encountered. Two species on the BNF are currently known only from the Stevensville District; the Coeur d'Alene Salamander and Painted Turtle. The former species is known from but a single location along Sweathouse Creek in the Bitterroot Mountains, and needs reconfirmation. The latter species is found along the Bitterroot River N of Hamilton, but has yet to be reported on BNF land. The Idaho Giant Salamander may be present due to proximity of the District to known localities in Idaho. Substantial populations of the Tailed Frog have been found in major mountain streams both in the Bitterroot and Sapphire Mountains. High mountain lakes should continue to be surveyed for breeding populations of Long-toed Salamanders, Western Toads and Spotted Frog; a few of these (such as Little Carlton Lake) would make good sites for long-term monitoring. The few high-elevation lakes checked in 1995 suggested that salamander reproduction was widespread and healthy, frog reproduction may be locally healthy, and toad reproduction infrequent and of concern. The Willoughby Environmental Area (T8NR19WS17NE) is a good place to routinely search for reptiles, as are S-facing slopes and creek-side vegetation at most canyon mouths. Concerned citizens might be willing to participate in long-term surveys.

Darby District: Fifteen of 17 amphibian and reptile species reported from the BNF area have been found on this District; only Coeur d'Alene Salamander and Painted Turtle have yet to be encountered. Coeur d'Alene Salamanders should be looked for at appropriate seepages and splash zones near waterfalls in the Bitterroot Mountains; reports of this species in lakes are misidentified Long-toed Salamanders. Painted Turtles are likely to occur in ponds and marshes along the Bitterroot River. The Idaho Giant Salamander may be present due to proximity of the District to known localities in Idaho. The Pacific Chorus Frog, Northern Leopard Frog and Racer are unique to this District; the leopard frog may now be extinct in the Bitterroot Valley. Kramis Pond (T4NR21WS30SE) and the unnamed pond near the confluence of South Lost Horse Creek and Lost Horse Creek (T4NR21WS18SW) are easily accessible and excellent sites for long-term monitoring of Long-toed Salamander, Western Toad, Pacific Chorus Frog and Spotted Frog (both sites were visited on two or more occasions in 1995 and systematically sampled). As for the Stevensville District, high-elevation lakes should be surveyed for amphibian populations and one or two identified for long-term monitoring; Dam Creek Lake (7310') in the Sapphire Mountains (which harbored many Long-toed Salamanders and Spotted Frogs in late August) is a suitable site. Road and hillside surveys along the lower parts of Skalkaho and Sleeping Child creeks could be routinely conducted for both lizard species, Racers and Western Rattlesnakes.

West Fork District: Only four (Tailed Frog, Spotted Frog, Northern Alligator Lizard, Western Terrestrial Garter Snake) of 17 amphibian and reptile species known from the BNF area have been reported on this District. The paucity of species reported undoubtedly reflects the lack of survey effort rather than actual low species richness for the District. There are many marshy

areas along the West Fork of the Bitterroot River that should be searched for amphibians and garter snakes; a pond about 0.25 miles S of Black Creek (T1SR22WS23NW) would make a good long-term monitoring site for Spotted Frogs and perhaps Long-toed Salamanders and Western Toads. The Nez Perce Fork, which was not visited in 1995, should be searched for amphibians. As with the other districts, high elevation lakes should be surveyed for amphibians. The area around Painted Rocks Lake (especially slopes west of the dam) could be routinely searched for Northern Alligator Lizards and Western Skinks. Given the few sites visited in 1995, the entire District merits further survey coverage.

Sula District: Eight (Long-toed Salamander, Tailed Frog, Western Toad, Spotted Frog, Northern Alligator Lizard, Rubber Boa, Gopher Snake, Western Terrestrial Garter Snake, Western Rattlesnake) of 17 amphibian and reptile species known for the BNF area have been reported from this District; several missing species (e.g., Western Skink, Racer, Common Garter Snake) may occur on the District in suitable habitat and should be looked for. Most of the species known on the District, other than the Tailed Frog, have been reported from but a single locality. The bog at Lost Trail Pass (7060') is a good site to search for Long-toed Salamanders, Western Toads and Spotted Frogs, and would make an excellent long-term monitoring site. No sites on the East Fork river above Ross Hole were surveyed during 1995, but the area should be searched for amphibians and garter snakes. The Crazy Creek drainage, and the area between Jim Hell Rock and Sula, would be good areas to search for the two lizard species, Racers, Gopher Snakes and Western Rattlesnakes. Given the few sites visited in 1995, the entire District merits further survey coverage.

RECOMMENDATIONS

- 1) Monitoring of the Coeur D'Alene Salamander should be conducted following the specific protocols in the Conservation Assessment (Cassirer et al. 1994). This includes monitoring the Sweathouse Creek site every 10 years. Because there is currently but a single site known for the Forest, this location could be checked annually in a nonintrusive manner. Other potential sites on the BNF should be visited and searched for this species. Such sites would include spray zones around falls on Bass, Mill, Boulder, and Bear creeks (see Genter et al. 1988). Best time to search is in early fall, when runoff is low, and after dark, when the salamanders are most surface-active.
- 2) Long-term monitoring of typical marsh-pond habitats should be set up at two or three sites in a district in order to evaluate relative numbers and breeding success of the more common species: Long-toed Salamander, Spotted Frog, Western Toad, Pacific Chorus Frog, Western Terrestrial Garter Snake and Common Garter Snake. Particular attention needs to be given to the Western Toad and the Pacific Chorus Frog. Survey sites should be at both low and high elevations. It should be borne in mind, however, that mark-recapture studies provide the best estimates of population trends of amphibians (Blaustein *et al.* 1994); if resources are available, mark-recapture studies are strongly encouraged for incorporation into any monitoring program. Heyer *et al.* (1994) provide suggestions and guidelines for developing monitoring programs and mark-recapture studies.
- 3) Due to time constraints and the large area covered, the 1995 survey should not be regarded as a definitive index of the distribution of all amphibians and reptiles in the BNF area. The secretive habits of many amphibians and reptiles, and our lack of knowledge regarding their reproductive behavior makes it difficult to assess their overall status. Long-term monitoring and/or frequent surveys are the only tools we have for assuring their existence into the future. We recommend that additional surveys be conducted, concentrating on: A) potential Western Toad and Pacific Chorus Frog breeding sites; B) low-elevation, xeric habitats for reptiles; C) high-elevation wetlands, and C) any historical amphibian sites not yet revisited. In particular, additional wetland surveys should be done on any small ponds and lakes which lack fish and dry up in at least some years; such areas at all altitudes need additional surveys. These areas, particularly those that are quite small and dry up every year, are often missed because many do not appear on USGS maps.
- 4) The life history and ecology of amphibians in Montana is poorly known for most species. Only perhaps for the Tailed Frog and Coeur d'Alene Salamander are information presently available to do habitat suitability models and perhaps population viability analyses. For the Spotted Frog we are lacking information on which habitats successful reproduction is taking place, as opposed to where breeding is attempted. For the other species of amphibians and all reptiles we are far from having sufficient data for habitat suitability models or population viability analyses. Long-term monitoring will give us needed information on timing of and habitat requirements for successful breeding.

- 5) Sightings of the Coeur d'Alene Salamander, Pacific Chorus Frog, the two lizard species (Northern Alligator Lizard, Western Skink), Racer, and Western Rattlesnake are relatively to quite rare on the BNF, and usually fortuitous. It is recommended that reliable reports of these species be recorded; specific time, location, and observer should be kept on file. It is possible that any one of these species could disappear without us even realizing it.
- 6) Sighting of the Idaho Giant Salamander would represent a first-time occurrence and range extension; thus, it is important to document and record such data. Photos should be taken or, if appropriate, a specimen collected.
- 7) A program to increase visitor awareness and appreciation of amphibians and reptiles could (should) be developed. Signs illustrating and describing the value of small ponds as breeding sites for a variety of amphibians found on the BNF (perhaps focusing on the species known to use that specific site) could be installed at Kramis Pond (near Upper Como Campground at Lake Como), the bog at Lost Trail Pass, and perhaps at some site around Painted Rocks Lake; a similar interpretive display could be established at the Willoughby Environmental Area, once amphibian and reptile use there is determined. All sites receive concentrated visitor use. A brochure describing the habitats and distributions of amphibians and reptiles in the BNF could be a useful source of additional distribution information if sightings are solicited in the brochure, and would also aid in increasing visitor awareness of these animals. At the very least, visitor reports could provide information on locations that should be surveyed by biologists. These brochures could be made available at trailheads, day-use areas, and campgrounds, as well as at Forest and District offices. Cost of such a program should be relatively low.

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APPENDIX 1.

SITES SURVEYED DURING 1995

AMPHIBIAN AND REPTILE SURVEYS

APPENDIX 1. Sites surveyed during 1995 amphibian and reptile surveys.

Site	Location	Elevation	Date	Start Time
BITTERROOT NATIONAL FOREST				
Stevensville District				
Willoughby Environ. Area*	T8N R19W S17 NE4	4000	22 Jun 95	1415
near Gold Cr. Campground*	T7N R18W S6 NW4	4840	22 Jun 95	1610
cattail marsh along Hwy 93*	T9N R20W S28 SW4	3400	12 Jul 95	1250
Carlton Lake	T11N R21W S27 NE4	7790	1 Sept 95	1255
Little Carlton Lake	T11N R21W S27 SE4	7740	1 Sept 95	1340
Florence Bridge, cattail pond	T10N R20W S12 SE4	3300	14 Aug 95	1335
Bass Cr. Trailhead*	T10N R20W S31 SE4	3860	14 Aug 95	1130
unnamed lake, St. Mary Pk.	T9N R21W S28 SE4	7990	10 Aug 95	1115
Sawmill Creek pond	T8N R18W S18 SW4	4820	22 Jun 95	1510
pond 1 mi. N of Victor	T8N R20W S19 SE4	3420	16 Jun 95	1050
Darby District				
Kramis Pond	T4N R21W S30 SE4	4290	19 May 95	1245
Kramis Pond	T4N R21W S30 SE4	4290	16 Jun 95	1610
pond; near S Lost Horse Cr.	T4N R21W S18 SW4	4350	19 May 95	1415
pond; near S Lost Horse Cr.	T4N R21W S18 SW4	4350	16 Jun 95	1400
pond; near S Lost Horse Cr.	T4N R21W S18 SW4	4350	12 Jul 95	1420
pond; near S Lost Horse Cr.*	T4N R21W S18 SW4	4350	31 Aug 95	1030
Dam Creek Lake	T6N R18W S24 NW4	7310	31 Aug 95	1310
Mud Lake (Deerlodge N.F.)	T6N R17W S32 NW4	7020	31 Aug 95	1210
pond W of Trapper Creek*	T2N R21W S27 SE4	4140	15 Aug 95	1430
Hannon Mem. Fish. Access (W)	T3N R21W S36 SE4	3950	15 Aug 95	1340
Hannon Mem. Fish. Access (E)	T3N R21W S36 NE4	3950	15 Aug 95	1300

* Sites with no herps found during survey

APPENDIX 1 (continued). Sites surveyed during 1995 amphibian and reptile surveys.

<u>Site</u>	<u>Location</u>	<u>Elevation</u>	<u>Date</u>	<u>Start Time</u>
Sula District				
1 mi SE Spring Gulch CG, HWY 93*	T1N R19W S7 NW4	4350	21 Jun 95	1055
Pond, base of Jim Hell Rock*	T1N R19W S7 SE4	4380	21 Jun 95	1118
Bog, Lost Trail Pass	T2S R19W S4 E2	7060	16 Aug 95	0840
West Fork District				
1/4 mi S Black Creek	T1S R22W S23 NW4	4550	15 Aug 95	1715
Rombo Creek Campground	T1S R22W S11 NW4	4510	15 Aug 95	1630
small channel, mi. marker 9	T1N R21W S4 SE4	4240	15 Aug 95	1530
pond, mile marker 8	T1N R21W S3 NW4	4180	15 Aug 95	1500

* Sites with no herps found during survey

APPENDIX 2.

AMPHIBIANS AND REPTILES

OBSERVED DURING SURVEYS OF THE

BITTERROOT NATIONAL FOREST

IN 1995

APPENDIX 2. Amphibians and reptiles observed during surveys of the Bitterroot National Forest in 1995 (* = eggs or larvae present).

Site	Person Hrs:min	Total number of adults/juv of each species observed ¹						
		AMMA	BUBO	PSRE	RACA	RAPR	CHPI	THEL
Stevensville District								
Carlton Lake	0:25	2*				1		
Little Carlton Lake	0:40	15*				1		
Florence Bridge	0:30				12		4	
St. Mary unnamed lake	0:30	*						
Sawmill Cr. Pond	0:20	*						
pond N of Victor	0:30		*					
Darby District								
Kramis Pond (May)	0:20	*	21	5				
Kramis Pond (Jun)	0:45		*	*		2		
Lost Horse pond (May)	1:00	*		*		*		
Lost Horse pond (Jun)	0:35	*		*		*		
Lost Horse pond (Jul)	0:20	*		*		*		
Dam Creek Lake	0:30	*				112*		
Mud Lake	0:20					500*		
Hannon Mem. Fish. (W)	0:10					6		
Hannon Mem. Fish. (E)	0:15					3		
Sula District								
Lost Trail Pass bog	0:15	*						
West Fork District								
S of Black Cr.	0:15					9		
Rombo Creek CG	0:10					1		
channel, mi. mark. 9	0:15					3		
pond, mi. marker 8	0:15							1

¹AMMA=Ambystoma macrodactylum; BUBO=Bufo boreas; PSRE=Pseudacris regilla; RACA= Rana catesbeiana; RAPR=Rana pretiosa; CHPI=Chrysemys picta; THEL=Thamnophis elegans.

APPENDIX 3

AMPHIBIANS AND REPTILES

FROM IN AND AROUND

THE BITTERROOT NATIONAL FOREST

Natural Heritage Program 05/17/1996
Montana Animal Atlas (Herptile)
Species Report

County	Precision	Date	Breed	Data Type
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LONG-TOED SALAMANDER

Beaverhead	< .5 mile.	7/6/1979	No	Museum Specimen
T01N R17W Section 29				

Granite	.5 to 5 mil	// 0	No	Museum Specimen
Sapphire Mountains, 27.5 miles E. on Route 38 of Grantsdale, Ravalli County				

Granite	.5 to 5 mil	// 1966	No	Observation
Kitchen Creek, near Missoula				

Granite	< .5 mile.	4/26/1949	No	Museum Specimen
Bonita, Kitchen Creek				

Missoula	.5 to 5 mil	8/12/1962	No	Museum Specimen
22 mi. S. of Missoula on U. S. 10 at Bonita Ranger Station				

Missoula	< .5 mile.	9/1/1995	Yes	Observation
Little Carlton Lake				

Missoula	< .5 mile.	9/1/1995	Yes	Observation
Carlton Lake				

Missoula	< .5 mile.	7/23/1978	No	Observation
Mary's Frog Pond, 5750				

Ravalli	.5 to 5 mil	8/14/1934	No	Museum Specimen
Tag Alder Lake, Blodgett Mountain				

Ravalli	.5 to 5 mil	6/4/1932	No	Museum Specimen
Charles Heights, 8 mi S, 1 mi W of Hamilton				

Ravalli	> 10 miles.	// 0	No	Museum Specimen
Lake Como Well, near Darby				

Ravalli	.5 to 5 mil	4/ / 1940	No	Museum Specimen
NW of Darby, Lake Como				

Ravalli	.5 to 5 mil	5/24/1950	No	Museum Specimen
Skalkaho Pass, E. side of canyon				

Ravalli	.5 to 5 mil	8/10/1947	Yes	Museum Specimen
Bitterroot Mountains, upper McCalla Lake, just below St. Mary's Peak				

Ravalli	.5 to 5 mil	10/3/1939	No	Museum Specimen
Lake Como				

Natural Heritage Program 05/17/1996
 Montana Animal Atlas (Herptile)
 Species Report

County Precision Date Breed Data Type

LONG-TOED SALAMANDER (continued)

Ravalli	.5 to 5 mil	9/ 7/1986	No	Museum Specimen
Pond near Canyon Creek, ca. 10 mi. (air) W. of Hamilton.				
Ravalli	.5 to 5 mil	8/14/1934	No	Museum Specimen
Tag Alder Lake; Blodgett Mountain				
Ravalli	< .5 mile.	5/19/1995	Yes	Museum Specimen
Pond ca. 1 mi. E. of confluence of Lost Horse & S. Lost Horse Creeks.				
Ravalli	< .5 mile.	5/19/1995	Yes	Observation
Kramis Pond, on NE side of Lake Como				
Ravalli	< .5 mile.	6/22/1995	Yes	Observation
Sawmill Creek Pond.				
Ravalli	< .5 mile.	8/31/1995	Yes	Museum Specimen
Dam Creek Lake				
Ravalli	< .5 mile.	8/16/1995	Yes	Museum Specimen
Bog at Lost Trail Pass				
Ravalli	< .5 mile.	8/10/1995	Yes	Museum Specimen
Unnamed lake at head of McCalla Creek, on S. slope of St. Mary Peak				
Ravalli	< .5 mile.	9/ /1995	No	Observation
Lost Horse Canyon				
Ravalli	< .5 mile.	8/ 1/1978	No	Observation
Near Gash Creek, 6140 ft.				
Ravalli	< .5 mile.	9/11/1977	No	Observation
Glenn Lake, 7542 ft.				
Ravalli	< .5 mile.	7/22/1978	No	Observation
Above Glenn Lake, 7834 ft.				
Ravalli	< .5 mile.	8/10/1978	No	Observation
Above Hidden Lake, 7340 ft.				
Ravalli	< .5 mile.	8/ 9/1978	No	Observation
Stegasaurus Lake				
Ravalli	< .5 mile.	8/ 8/1978	No	Observation
Above Pearl Lake, 7312				

Natural Heritage Program
Montana Animal Atlas (Herptile)
Species Report

05/17/1996

County	Precision	Date	Breed	Data Type
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LONG-TOED SALAMANDER (continued)

Ravalli	< .5 mile.	7/27/1978	No	Observation
In Sharrot Creek basin, 7260 feet				
Ravalli	< .5 mile.	7/27/1978	No	Observation
In Sharrot Creek basin, 7600 ft.				
Ravalli	< .5 mile.	8/31/1977	No	Observation
In Sharrot Creek basin, 7600 ft.				
Ravalli	< .5 mile.	8/31/1977	No	Observation
In Sharrot Creek basin, 8000 ft.				
Ravalli	< .5 mile.	9/ 6/1977	No	Observation
In McCalla Creek basin, 7980 ft.				
Ravalli	< .5 mile.	9/ 6/1977	No	Observation
In McCalla Creek basin, 8000 ft.				
Ravalli	< .5 mile.	8/12/1978	No	Observation
Lower St. Marys Lake, 7393				
Ravalli	< .5 mile.	8/13/1978	No	Observation
Upper Digger Lake, 6790				
Ravalli	< .5 mile.	8/25/1978	No	Observation
Beaver Creek basin, 7260 ft.				
Ravalli	< .5 mile.	8/25/1978	No	Observation
Beaver Creek basin, 7500 ft.				
Ravalli	< .5 mile.	8/25/1978	No	Observation
Alder Creek, 6580 ft.				
Ravalli	< .5 mile.	9/ 3/1978	No	Observation
Lappi Lake, 7000 ft.				
Ravalli	< .5 mile.	7/25/1978	No	Observation
East shoulder Little St. Joe, 6280 ft.				
Ravalli	< .5 mile.	8/ 4/1978	No	Observation
Ascaphus Lake (Bass-S.F. Lolo Divide), 7100 ft.				
Ravalli	< .5 mile.	8/ 5/1978	No	Observation
Sweeney Lake, 7340 ft.				

Natural Heritage Program
Montana Animal Atlas (Herptile)
Species Report

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County	Precision	Date	Breed	Data Type
LONG-TOED SALAMANDER (continued)				

Ravalli	< .5 mile.	7/29/1978	No	Observation
Pond by Duffey Lake				

Ravalli	< .5 mile.	7/30/1978	No	Observation
N. on pond by Duffey Lake, 8100 ft.				

Ravalli	< .5 mile.	9/2/1978	No	Observation
Reed Lake, 7900				

Ravalli	< .5 mile.	7/28/1978	No	Observation
NE side Carlton Peak, 7450 ft.				

Ravalli	< .5 mile.	8/21/1978	No	Observation
Teri Lake, 7475 ft.				

Ravalli	< .5 mile.	8/21/1978	No	Observation
Below Teri Lake, 6910				

Ravalli	< .5 mile.	8/19/1978	No	Observation
Slough by Lake Como parking, 4260 ft.				

COEUR D'ALENE SALAMANDER

Ravalli	< .5 mile.	5/25/1987	No	Observation
Sweathouse Creek Road, ca. 5 miles west of Victor				

TAILED FROG

Beaverhead	< .5 mile.	8/11/1986	Yes	Observation
Elk Creek				

Beaverhead	< .5 mile.	8/11/1986	Yes	Observation
Elk Creek				

Deer Lodge	< .5 mile.	7/20/1988	No	Observation
W. Fork Mudd Creek				

Granite	5 to 10 mil	7/24/1958	No	Museum Specimen
Ranch Creek, ca. 11 mi. S. of I-90 on Rock Creek Rd.				

Granite	.5 to 5 mil	7/24/1958	No	Museum Specimen
Ranch Creek (tributary of Rock Creek)				

Granite	.5 to 5 mil	1/20/1952	Yes	Museum Specimen
Rock Creek, near entrance of Spring Creek				

Natural Heritage Program 05/17/1996
Montana Animal Atlas (Herptile)
Species Report

County	Precision	Date	Breed	Data Type
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TAILED FROG (continued)

Missoula	.5 to 5 mil	/ /1966	No	Observation Lee Creek near Lolo Pass
Missoula	.5 to 5 mil	8/20/1950	Yes	Museum Specimen 5 mi. upstream from Lolo Hot Springs Post Office, Lolo Creek
Missoula	.5 to 5 mil	8/ 3/1963	No	Museum Specimen Lantern Creek; ca. 4 mi. (air) S. of Lolo Creek
Ravalli	5 to 10 mil	4/13/1966	No	Museum Specimen Piquett Creek, ca. 6 mi. SW of Connor via SR473
Ravalli	.5 to 5 mil	5/25/1987	No	Observation Boulder pile in spray zone at base of 8 m falls
Ravalli	.5 to 5 mil	/ /1991	No	Observation Gold Creek trailhead, near Stevensville
Ravalli	.5 to 5 mil	/ /1991	No	Observation Meadow Creek, near Sula, 6 mi. from E. Fork Bitterroot River.
Ravalli	.5 to 5 mil	/ /1991	No	Observation North Fork Rye Creek, near Darby.
Ravalli	.5 to 5 mil	/ /1991	No	Observation 11 mi. up Rye Creek, S. of Darby
Ravalli	.5 to 5 mil	/ /1991	No	Observation Near Hamilton, 2 mi. beyond forest boundary.
Ravalli	.5 to 5 mil	/ /1991	No	Observation 0.5 mi. up Bear Creek trailhead, near Victor
Ravalli	.5 to 5 mil	/ /1991	No	Observation Meadow Creek, near Sula.
Ravalli	.5 to 5 mil	/ /1991	No	Observation 1 mi. up Skalkaho Creek, near Hamilton
Ravalli	.5 to 5 mil	/ /1991	No	Observation Sleeping Child Hot Springs, near Hamilton
Ravalli	.5 to 5 mil	/ /1991	No	Observation Sleeping Child Hot Springs, near Hamilton, 4 mi. up the creek

Natural Heritage Program 05/17/1996
Montana Animal Atlas (Herptile)
Species Report

County	Precision	Date	Breed	Data Type
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TAILED FROG (continued)

Ravalli	.5 to 5 mil	/ /1991	No	Observation
Sleeping Child Hot Springs, near Hamilton, 6 mi. up the creek				
Ravalli	.5 to 5 mil	/ /1991	No	Observation
Tolan Creek, ca. 3 mi. E. of Sula Ranger Station				
Ravalli	.5 to 5 mil	/ /1991	No	Observation
Tolan Creek, ca. 3 mi. E. of Sula Ranger Station				
Ravalli	.5 to 5 mil	/ /1991	No	Observation
0.75 mi. up Beaver Creek Rd., near Painted Rocks Reservoir				
Ravalli	.5 to 5 mil	/ /1991	No	Observation
0.5 mi. past the Deer Creek trailhead, near Painted Rocks Reservoir				
Ravalli	.5 to 5 mil	/ /1991	No	Observation
Ca. 0.5 mi. up Woods Creek, near Painted Rocks Reservoir				
Ravalli	.5 to 5 mil	/ /1991	No	Observation
Reimel Creek, near Sula Ranger Station				
Ravalli	.5 to 5 mil	7/22/1932	No	Observation
Camas Lake				
Ravalli	5 to 10 mil	4/13/1966	Yes	Museum Specimen
Piquett Creek				
Ravalli	.5 to 5 mil	10/ 3/1992	Yes	Museum Specimen
Blue Joint Creek				
Ravalli	.5 to 5 mil	7/ 2/1991	Yes	Museum Specimen
Skalkaho Creek at Daly Creek				
Ravalli	.5 to 5 mil	10/13/1992	Yes	Museum Specimen
Warm Spring Creek				
Ravalli	.5 to 5 mil	6/ 1/1955	No	Museum Specimen
Big Creek				
Ravalli	.5 to 5 mil	8/ 6/1965	No	Museum Specimen
Skalkaho Falls, HWY 38				
Ravalli	.5 to 5 mil	7/22/1932	No	Museum Specimen
Camas Lake				

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Montana Animal Atlas (Herptile)
Species Report

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County	Precision	Date	Breed	Data Type
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TAILED FROG (continued)

Ravalli	.5 to 5 mil	8/23/1984	No	Museum Specimen Larry Creek Road, ca. 0.25 mi. below 1st jct. above Larry Cr. Campground
Ravalli	< .5 mile.	8/ 8/1994	No	Observation Skalkaho Creek
Ravalli	< .5 mile.	8/ 1/1995	No	Observation Big Creek Lake
Ravalli	< .5 mile.	7/ /1990	No	Observation Bear Creek
Ravalli	< .5 mile.	9/21/1995	Yes	Observation Sweeney Creek
Ravalli	< .5 mile.	8/ 8/1994	No	Observation Barnett Meadows tributary
Ravalli	< .5 mile.	7/19/1995	No	Observation Bass Creek
Ravalli	< .5 mile.	7/18/1995	No	Observation Bass Creek
Ravalli	< .5 mile.	3/30/1995	No	Observation Bass Creek, below Barrier Falls
Ravalli	< .5 mile.	8/26/1991	No	Observation Bear Creek, 0.5 miles above trailhead.
Ravalli	< .5 mile.	7/11/1995	No	Observation Beaver Creek, mouth
Ravalli	< .5 mile.	7/11/1995	No	Observation Beaver Creek
Ravalli	< .5 mile.	6/28/1994	No	Observation Bertie Lord Creek
Ravalli	< .5 mile.	6/27/1994	No	Observation Bertie Lord Creek, east fork
Ravalli	< .5 mile.	7/13/1994	No	Observation Bertie Lord Creek, east fork

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TAILED FROG (continued)

Ravalli	< .5 mile.	7/ 6/1994	No	Observation
Bertie Lord Creek, at mouth				
Ravalli	< .5 mile.	7/19/1994	No	Observation
Blue Joint Creek				
Ravalli	< .5 mile.	8/11/1993	No	Observation
Blue Joint Creek				
Ravalli	< .5 mile.	9/26/1993	No	Observation
Blue Joint Creek				
Ravalli	< .5 mile.	6/ 7/1995	No	Observation
Blue Joint Creek, mouth				
Ravalli	< .5 mile.	6/ 8/1995	No	Observation
Blue Joint Creek				
Ravalli	< .5 mile.	8/11/1993	No	Observation
Blue Joint tributary				
Ravalli	< .5 mile.	8/11/1993	No	Observation
"Steep Hills tributary"				
Ravalli	< .5 mile.	9/ 3/1992	No	Observation
Boulder Creek				
Ravalli	< .5 mile.	8/ 5/1994	No	Observation
Buck Creek, just above mouth.				
Ravalli	< .5 mile.	7/27/1994	No	Observation
Bugle Creek, mouth				
Ravalli	< .5 mile.	7/27/1994	No	Observation
Bugle Creek				
Ravalli	< .5 mile.	7/27/1994	No	Observation
Bugle Creek				
Ravalli	< .5 mile.	9/ 6/1994	No	Observation
Burnt Fork Bitterroot River				
Ravalli	< .5 mile.	6/14/1994	No	Observation
Bush Creek				

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TAILED FROG (continued)

Ravalli	< .5 mile.	6/15/1994	No	Observation
Bush Creek				
Ravalli	< .5 mile.	8/30/1990	No	Observation
Cameron Creek				
Ravalli	< .5 mile.	6/22/1993	No	Observation
Camp Creek, W. fork tributary				
Ravalli	< .5 mile.	7/ 6/1993	No	Observation
Camp Creek, W. fork tributary				
Ravalli	< .5 mile.	8/23/1995	No	Observation
Canyon Creek				
Ravalli	< .5 mile.	8/ 5/1994	No	Observation
Carmine Creek				
Ravalli	< .5 mile.	6/19/1995	No	Observation
Castner Creek				
Ravalli	< .5 mile.	8/ 6/1994	No	Observation
Clifford Creek mouth				
Ravalli	< .5 mile.	6/28/1995	No	Observation
Coal Creek				
Ravalli	< .5 mile.	7/18/1995	No	Observation
Coal Creek				
Ravalli	< .5 mile.	6/28/1995	No	Observation
Coal Creek tributary				
Ravalli	< .5 mile.	6/29/1995	No	Observation
Coal Creek tributary				
Ravalli	< .5 mile.	7/25/1994	No	Observation
Corner Creek				
Ravalli	< .5 mile.	6/30/1993	No	Observation
Crazy Creek				
Ravalli	< .5 mile.	7/ 1/1993	No	Observation
Crazy Creek				

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TAILED FROG (continued)				
Ravalli	< .5 mile.	6/20/1994	No	Observation
Cuba Creek				
Ravalli	< .5 mile.	9/12/1989	No	Observation
Daly Creek				
Ravalli	< .5 mile.	8/ 2/1993	No	Observation
Daly Creek tributary				
Ravalli	< .5 mile.	9/23/1993	No	Observation
Daly Creek tributary				
Ravalli	< .5 mile.	6/30/1995	No	Observation
Deer Creek				
Ravalli	< .5 mile.	7/22/1993	No	Observation
Deer Creek				
Ravalli	< .5 mile.	7/22/1993	No	Observation
Deer Creek				
Ravalli	< .5 mile.	7/22/1993	No	Observation
Deer Creek tributary				
Ravalli	< .5 mile.	7/28/1994	No	Observation
Dense Creek				
Ravalli	< .5 mile.	6/15/1995	No	Observation
Devil Creek				
Ravalli	< .5 mile.	6/23/1993	No	Observation
Diggins Creek, just above Reimel Creek Road				
Ravalli	< .5 mile.	9/21/1992	No	Observation
East Fork Bitterroot River				
Ravalli	< .5 mile.	9/14/1992	No	Observation
East Fork Bitterroot River				
Ravalli	< .5 mile.	8/14/1992	No	Observation
East Fork Bitterroot River				
Ravalli	< .5 mile.	8/ 7/1994	No	Observation
East Fork Bitterroot River				

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TAILED FROG (continued)

Ravalli Elk Creek	< .5 mile.	7/18/1995	No	Observation
Ravalli Fred Burr Creek	< .5 mile.	8/23/1993	No	Observation
Ravalli Gentile Creek	< .5 mile.	5/30/1995	No	Observation
Ravalli Gilbert Creek	< .5 mile.	9/21/1995	No	Observation
Ravalli Gold Creek	< .5 mile.	8/ 2/1990	No	Observation
Ravalli Hart Creek	< .5 mile.	9/ 7/1993	No	Observation
Ravalli Hayes Creek	< .5 mile.	7/14/1995	No	Observation
Ravalli Hog Trough Creek	< .5 mile.	7/22/1993	No	Observation
Ravalli Hughes Creek	< .5 mile.	7/27/1993	No	Observation
Ravalli Kootenai Creek	< .5 mile.	8/22/1995	No	Observation
Ravalli Laird Creek	< .5 mile.	9/18/1995	No	Observation
Ravalli Laird Creek	< .5 mile.	9/20/1995	No	Observation
Ravalli Larry Creek	< .5 mile.	7/10/1995	No	Observation
Ravalli Lick Creek	< .5 mile.	9/12/1991	No	Observation
Ravalli Little Blue Joint Creek	< .5 mile.	7/31/1995	No	Observation

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TAILED FROG (continued)				
Ravalli	< .5 mile.	7/31/1995	No	Observation
Little Blue Joint Creek				
Ravalli	< .5 mile.	7/31/1995	No	Observation
Little Blue Joint Creek				
Ravalli	< .5 mile.	7/ 8/1993	No	Observation
Little Tin Cup Creek				
Ravalli	< .5 mile.	8/11/1992	No	Observation
Little West Fork				
Ravalli	< .5 mile.	7/ 1/1993	No	Observation
Lupine Creek				
Ravalli	< .5 mile.	6/19/1995	No	Observation
Malloy Gulch, mouth				
Ravalli	< .5 mile.	8/16/1993	No	Observation
Martin Creek				
Ravalli	< .5 mile.	7/29/1993	No	Observation
Martin Creek				
Ravalli	< .5 mile.	7/14/1994	No	Observation
Martin Creek				
Ravalli	< .5 mile.	7/19/1994	No	Observation
Martin Creek, mouth				
Ravalli	< .5 mile.	7/18/1994	No	Observation
Martin Creek tributary				
Ravalli	< .5 mile.	9/25/1995	No	Observation
Maynard Creek				
Ravalli	< .5 mile.	9/26/1995	No	Observation
Maynard Creek				
Ravalli	< .5 mile.	9/27/1995	No	Observation
Maynard Creek				
Ravalli	< .5 mile.	8/ 2/1993	No	Observation
Meadow Creek				

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TAILED FROG (continued)

Ravalli	< .5 mile.	9/ 5/1990	No	Observation
Meadow Creek				

Ravalli	< .5 mile.	7/24/1994	No	Observation
Meadow Creek				

Ravalli	< .5 mile.	9/10/1995	No	Observation
Mine Creek				

Ravalli	< .5 mile.	9/10/1995	No	Observation
Mine Creek				

Ravalli	< .5 mile.	6/26/1995	No	Observation
Mine Creek				

Ravalli	< .5 mile.	6/27/1995	No	Observation
Mine Creek				

Ravalli	< .5 mile.	6/27/1995	No	Observation
Mine Creek				

Ravalli	< .5 mile.	6/29/1995	No	Observation
Mine Creek				

Ravalli	< .5 mile.	7/ 6/1995	No	Observation
Mine Creek tributary				

Ravalli	< .5 mile.	9/20/1995	No	Observation
Moon Creek, mouth				

Ravalli	< .5 mile.	8/ 4/1994	No	Observation
Moose Creek				

Ravalli	< .5 mile.	6/20/1994	No	Observation
Moose Creek				

Ravalli	< .5 mile.	6/22/1994	No	Observation
Moose Creek				

Ravalli	< .5 mile.	8/17/1993	No	Observation
McCalla Creek				

Ravalli	< .5 mile.	8/ 9/1993	No	Observation
McCoy Creek				

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TAILED FROG (continued)				
Ravalli	< .5 mile.	7/12/1994	No	Observation
Needle Creek				
Ravalli	< .5 mile.	7/12/1994	No	Observation
Needle Creek				
Ravalli	< .5 mile.	8/10/1992	No	Observation
Nez Perce Creek				
Ravalli	< .5 mile.	8/10/1992	No	Observation
Nez Perce Creek				
Ravalli	< .5 mile.	7/ 5/1992	No	Observation
Nez Perce Creek				
Ravalli	< .5 mile.	8/12/1992	No	Observation
Nez Perce Creek				
Ravalli	< .5 mile.	9/ 5/1993	No	Observation
Notch Creek				
Ravalli	< .5 mile.	9/ 5/1993	No	Observation
Notch Creek at tributary intersection.				
Ravalli	< .5 mile.	8/31/1995	No	Observation
One Horse Creek				
Ravalli	< .5 mile.	8/ 6/1994	No	Observation
Orphan Creek				
Ravalli	< .5 mile.	7/19/1993	No	Observation
Overwhich Creek				
Ravalli	< .5 mile.	7/20/1993	No	Observation
Overwhich Creek				
Ravalli	< .5 mile.	7/25/1995	No	Observation
Overwhich Creek				
Ravalli	< .5 mile.	6/16/1994	No	Observation
Paint Creek, mouth				
Ravalli	< .5 mile.	7/13/1994	No	Observation
Paint Creek				

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TAILED FROG (continued)

Ravalli Piquette Creek	< .5 mile.	9/13/1991	No	Observation
Ravalli Reimel Creek	< .5 mile.	8/ 3/1995	No	Observation
Ravalli Reimel Creek	< .5 mile.	8/ 3/1995	No	Observation
Ravalli Reynolds Creek	< .5 mile.	6/ 8/1994	No	Observation
Ravalli Roaring Lion Creek	< .5 mile.	8/28/1995	No	Observation
Ravalli Rye Creek	< .5 mile.	7/30/1990	No	Observation
Ravalli S. Fork Lost Horse Creek	< .5 mile.	7/30/1992	No	Observation
Ravalli S. Fork Lost Horse Creek	< .5 mile.	9/11/1993	No	Observation
Ravalli Salt Creek	< .5 mile.	7/ 6/1995	No	Observation
Ravalli Salt Creek	< .5 mile.	7/10/1995	No	Observation
Ravalli Salt Creek	< .5 mile.	7/11/1995	No	Observation
Ravalli Sand Creek	< .5 mile.	6/13/1995	No	Observation
Ravalli Sand Creek	< .5 mile.	6/13/1995	No	Observation
Ravalli Sawtooth Creek	< .5 mile.	8/29/1995	No	Observation
Ravalli Sheep Creek, mouth	< .5 mile.	7/10/1995	No	Observation

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TAILED FROG (continued)				
Ravalli Sheep Creek	< .5 mile.	8/ 1/1995	No	Observation
Ravalli Shepard Creek	< .5 mile.	7/14/1993	No	Observation
Ravalli Sign Creek	< .5 mile.	6/ 8/1994	No	Observation
Ravalli Sign Creek	< .5 mile.	7/11/1994	No	Observation
Ravalli Silverthorn Creek	< .5 mile.	6/28/1993	No	Observation
Ravalli Skalkaho Creek	< .5 mile.	7/27/1994	No	Observation
Ravalli Skalkaho Creek	< .5 mile.	8/27/1991	No	Observation
Ravalli Skalkaho Creek, mouth of East Branch	< .5 mile.	8/ 3/1993	No	Observation
Ravalli Slate Creek	< .5 mile.	7/17/1995	No	Observation
Ravalli Sleeping Child Creek	< .5 mile.	8/ 9/1993	No	Observation
Ravalli Smith Creek	< .5 mile.	8/17/1993	No	Observation
Ravalli Spoon Creek	< .5 mile.	6/30/1992	No	Observation
Ravalli Spruce Creek	< .5 mile.	7/26/1994	No	Observation
Ravalli Star Creek	< .5 mile.	8/ 7/1994	No	Observation
Ravalli Surprise Creek	< .5 mile.	7/ 9/1992	No	Observation

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TAILED FROG (continued)				
Ravalli	< .5 mile.	8/27/1991	No	Observation
Sweathouse Creek				
Ravalli	< .5 mile.	8/2/1995	No	Observation
Sweeney Creek				
Ravalli	< .5 mile.	7/28/1994	No	Observation
Swift Creek				
Ravalli	< .5 mile.	8/9/1994	No	Observation
Switchback Creek				
Ravalli	< .5 mile.	6/20/1995	No	Observation
Taylor Creek				
Ravalli	< .5 mile.	6/20/1995	No	Observation
Taylor Creek				
Ravalli	< .5 mile.	10/16/1995	No	Observation
Threemile Creek				
Ravalli	< .5 mile.	6/15/1995	No	Observation
Thunder Creek				
Ravalli	< .5 mile.	6/15/1995	No	Observation
Thunder Creek				
Ravalli	< .5 mile.	7/20/1995	No	Observation
Tolan Creek				
Ravalli	< .5 mile.	8/1/1991	No	Observation
Tolan Creek				
Ravalli	< .5 mile.	7/21/1995	No	Observation
Tolan Creek				
Ravalli	< .5 mile.	7/31/1995	No	Observation
Tolan Creek				
Ravalli	< .5 mile.	6/2/1995	No	Observation
Took Creek				
Ravalli	< .5 mile.	1/23/00	No	Observation
Tough Creek				

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TAILED FROG (continued)				
Ravalli	< .5 mile.	7/20/1993	No	Observation
Trout Creek				
Ravalli	< .5 mile.	7/31/1994	No	Observation
Two Bear Creek				
Ravalli	< .5 mile.	8/ 1/1995	No	Observation
Wallace Creek				
Ravalli	< .5 mile.	8/ 2/1995	No	Observation
Wallace Creek				
Ravalli	< .5 mile.	8/ 2/1995	No	Observation
Wallace Creek				
Ravalli	< .5 mile.	7/14/1995	No	Observation
Ward Creek				
Ravalli	< .5 mile.	8/24/1992	No	Observation
Warm Springs Creek				
Ravalli	< .5 mile.	9/ 8/1993	No	Observation
Warm Springs Creek				
Ravalli	< .5 mile.	7/26/1993	No	Observation
Weasel Creek				
Ravalli	< .5 mile.	6/22/1995	No	Observation
West Creek				
Ravalli	< .5 mile.	7/25/1991	No	Observation
W. Fork Bitterroot River				
Ravalli	< .5 mile.	7/19/1995	No	Observation
W. Fork Bitterroot River				
Ravalli	< .5 mile.	7/23/1991	No	Observation
Woods Creek				
Ravalli	< .5 mile.	9/ 3/1991	No	Observation
Woods Creek				

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WESTERN TOAD

Beaverhead	.5 to 5 mil	5/ /1978	No	Museum Specimen	T1S R16W Section 25
Granite	< .5 mile.	8/ 6/1975	Yes	Museum Specimen	Pond at T5N R15W S29
Ravalli	.5 to 5 mil	6/24/1976	No	Museum Specimen	8 km N Sula, E Fork Bitterroot River, 1350 m
Ravalli	.5 to 5 mil	7/13/1947	No	Museum Specimen	4 miles E. of Hamilton, Gird Creek
Ravalli	.5 to 5 mil	10/ 9/1939	No	Observation	Hamilton
Ravalli	.5 to 5 mil	/ /1967	Yes	Observation	Two large ponds, 1 mi. N. of Victor.
Ravalli	.5 to 5 mil	/ /1967	Yes	Observation	Two water-filled gravel pits 8 mi. SE. of Hamilton.
Ravalli	.5 to 5 mil	4/20/1957	No	Observation	Near Sula
Ravalli	.5 to 5 mil	5/26/1950	No	Observation	Blacktail Ridge in Sleeping Child Canyon in the Sapphire Range.
Ravalli	.5 to 5 mil	10/ 9/1939	No	Museum Specimen	Hamilton
Ravalli	.5 to 5 mil	5/ 9/1941	No	Museum Specimen	Lake Como
Ravalli	< .5 mile.	7/24/1995	Yes	Observation	Lost Trail Bog
Ravalli	< .5 mile.	5/19/1995	Yes	Museum Specimen	Kramis Pond, on NE side of Lake Como
Ravalli	< .5 mile.	6/16/1995	Yes	Museum Specimen	0.9 mi. NE of Victor, on W. side of HWY 93
Ravalli	< .5 mile.	8/15/1995	No	Observation	Kootenai Cr. Trail

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WESTERN TOAD (continued)

Ravalli	.5 to 5 mil	7/10/1995	No	Observation
Teller Wildlife Refuge				
Ravalli	< .5 mile.	7/ 5/1995	No	Observation
Hoy's yard				
Ravalli	< .5 mile.	6/ /1995	No	Observation
Gold Creek				
Ravalli	< .5 mile.	9/15/1995	No	Observation
In Larry Cr., just above upper road crossing of FS RD 1316				
Ravalli	< .5 mile.	7/19/1995	No	Observation
On Bass Creek Trail #4, ca. 1 mi. above trailhead				
Ravalli	< .5 mile.	6/22/1995	No	Observation
Bentie-Lord Creek				
Ravalli	< .5 mile.	7/14/1995	No	Observation
Two Bear Creek				
Ravalli	< .5 mile.	7/21/1995	No	Observation
Two Bear Creek				
Ravalli	< .5 mile.	8/27/1995	No	Observation
Sleeping Child Creek				
Ravalli	< .5 mile.	8/29/1995	No	Observation
Sleeping Child Creek				
Ravalli	< .5 mile.	7/18/1995	No	Observation
Bass Creek Trail #4				
Ravalli	< .5 mile.	7/18/1995	No	Observation
Bass Creek Trail #4				
Ravalli	< .5 mile.	7/18/1995	Yes	Observation
Bass Creek				

PACIFIC CHORUS FROG

Ravalli	.5 to 5 mil	10/ 4/1939	No	Museum Specimen
Lake Como				

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PACIFIC CHORUS FROG (continued)

Ravalli	5 to 10 mil	/ /	0 No	Observation	
Lake Como					
Ravalli	.5 to 5 mil	4/27/1947	No	Museum Specimen	
Hamilton, Lake Como					
Ravalli	.5 to 5 mil	10/ 3/1939	No	Museum Specimen	
Lake Como and well at Lake Como					
Ravalli	< .5 mile.	6/16/1995	Yes	Museum Specimen	
1 mi. E. of confluence of S. Lost Horse Creek and Lost Horse Creek.					
Ravalli	< .5 mile.	5/19/1995	Yes	Museum Specimen	
Kramis Pond, on NE side of Lake Como					
Ravalli	< .5 mile.	10/24/1995	No	Observation	

BULLFROG

Ravalli	5 to 10 mil	6/ 4/1966	Yes	Observation	
Near Stevensville in shallow ponds.					
Ravalli	< .5 mile.	7/12/1995	No	Observation	
Lee Metcalf NWR, 3 mi. N. of Stevensville					
Ravalli	< .5 mile.	8/14/1995	No	Observation	
Florence Bridge Fishing Access Site (pond W. of road and S. of Hwy)					
Ravalli	.5 to 5 mil	7/10/1995	No	Observation	
Teller Wildlife Refuge					
Ravalli	.5 to 5 mil	/ /1995	No	Observation	
Lee Metcalf Refuge					
Ravalli	< .5 mile.	6/ /1995	No	Observation	

NORTHERN LEOPARD FROG

Missoula	.5 to 5 mil	/ /	0 No	Museum Specimen	
Lolo Hot Springs					
Ravalli	.5 to 5 mil	/ /1964	No	Observation	
8 miles SE of Hamilton					

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NORTHERN LEOPARD FROG (continued)

Ravalli .5 to 5 mil 8/30/1969 No Museum Specimen
18 miles S. of Hamilton, Bitterroot Bridge

SPOTTED FROG

Beaverhead < .5 mile. 7/ 8/1995 No Observation
South end of Pintlar Lake

Granite .5 to 5 mil / / 0 No Museum Specimen
Sapphire Mountains, 27.5 miles E. of Grantsdale, 7100 feet

Granite .5 to 5 mil 7/17/1932 No Museum Specimen
Stony Lake

Granite < .5 mile. 7/21/1975 No Museum Specimen
N. Fork Rock Creek

Granite < .5 mile. 8/ 7/1975 Yes Museum Specimen
Frog Pond Basin

Granite < .5 mile. 7/21/1975 Yes Museum Specimen
Mud Lake

Granite < .5 mile. 8/ 6/1975 No Museum Specimen
Pond at T5N R15W S29

Granite .5 to 5 mil 8/17/1977 No Museum Specimen
Fuse Lake

Granite .5 to 5 mil 9/29/1945 No Museum Specimen
Bonita, Kitchen Creek

Granite .5 to 5 mil 8/31/1950 No Museum Specimen
Skalkaho Pass

Granite .5 to 5 mil 8/29/1950 No Museum Specimen
Ca. 20 mi. s. of Clinton, Harry's Flats, Rock Creek

Granite .5 to 5 mil 7/17/1932 No Specimen Reported
Stony Lake

Granite < .5 mile. 8/31/1995 Yes Museum Specimen
Mud Lake

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SPOTTED FROG (continued)				
Missoula	.5 to 5 mil	/ / 0	No	Museum Specimen
3 miles S. of Clinton				
Missoula	< .5 mile.	/ /1949	No	Museum Specimen
Lolo Hot Springs				
Missoula	.5 to 5 mil	8/15/1975	No	Specimen Reported
7.5 mi. S HWY 12 on Elk Meadows Rd.; Marys Frog Pond				
Missoula	< .5 mile.	9/ 1/1995	No	Observation
Little Carlton Lake				
Missoula	< .5 mile.	9/ 1/1995	No	Observation
Carlton Lake				
Ravalli	.5 to 5 mil	/ /1964	No	Observation
8 miles SE of Hamilton				
Ravalli	.5 to 5 mil	8/10/1971	No	Museum Specimen
Ca. 12 miles SW (NW on label) of Darby PO; W. Fork Bitterroot River				
Ravalli	.5 to 5 mil	10/ 2/1945	No	Museum Specimen
3 miles S. of Hamilton				
Ravalli	.5 to 5 mil	10/ 4/1939	No	Museum Specimen
Lake Como				
Ravalli	.5 to 5 mil	9/ 7/1960	No	Museum Specimen
Bitterroot River at Corvallis				
Ravalli	.5 to 5 mil	5/ 4/1950	No	Museum Specimen
W. of Hamilton, Bitterroot River				
Ravalli	.5 to 5 mil	5/ 7/1950	No	Museum Specimen
NW of Darby, N. side of Como Lake				
Ravalli	.5 to 5 mil	/ /1967	No	Museum Specimen
2 mi. E. of Black Bear Ranger Station, Skalakho HWY				
Ravalli	.5 to 5 mil	9/30/1945	No	Museum Specimen
3 mi. S. of Hamilton				
Ravalli	.5 to 5 mil	6/22/1982	No	Specimen Reported
Camp Cr. Campground on HWY 93				

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SPOTTED FROG (continued)

Ravalli Lake Como	.5 to 5 mil	10/ 3/1939	No	Specimen Reported
Ravalli Lost Trail Bog	< .5 mile.	7/24/1995	No	Observation
Ravalli On Skalkaho Creek, ca. 12 mi. SE of Hamilton.	< .5 mile.	5/19/1995	No	Observation
Ravalli Pond ca. 1 mi. E. of confluence of Lost Horse & S. Lost Horse Creeks.	< .5 mile.	5/19/1995	Yes	Museum Specimen
Ravalli Kramis Pond, on NE side of Lake Como.	< .5 mile.	5/19/1995	No	Observation
Ravalli Dam Creek Lake	< .5 mile.	8/31/1995	Yes	Museum Specimen
Ravalli Cutoff creek along W. Fk. Bitterroot River, ca. 0.25 mi. S. of Black Creek	< .5 mile.	8/15/1995	No	Observation
Ravalli Rombo Creek Campground	< .5 mile.	8/15/1995	No	Observation
Ravalli Small river channel, West Fork Bitterroot River	< .5 mile.	8/15/1995	No	
Ravalli Bitterroot River (Hannon Memorial Fishing Site)	< .5 mile.	8/15/1995	No	
Ravalli Teller Wildlife Refuge	.5 to 5 mil	7/10/1995	No	Observation
Ravalli Dam Lake, Skalkaho Basin	< .5 mile.	8/23/1995	Yes	Observation
Ravalli Two Bear Creek	< .5 mile.	7/14/1995	No	Observation
Ravalli Sleeping Child Creek	< .5 mile.	7/28/1995	No	Observation
Ravalli S. Fork Sleeping Child Creek	< .5 mile.	9/23/1995	Yes	Observation

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Montana Animal Atlas (Herptile)
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SPOTTED FROG (continued)

Ravalli	< .5 mile.	9/13/1995	Yes	Observation
"N. Fork" Sleeping Child Creek				

Ravalli	< .5 mile.	7/18/1995	No	Observation
Bass Creek				

Ravalli	< .5 mile.	8/28/1995	Yes	Observation
Roaring Lion Creek				

Ravalli	< .5 mile.	6/20/1995	No	Observation
Lick Creek				

PAINTED TURTLE

Ravalli	5 to 10 mil	/ / 0	No	Specimen Reported
See map in Black 1970				

Ravalli	5 to 10 mil	/ / 0	No	Specimen Reported
See map in Black, 1970				

Ravalli	.5 to 5 mil	7/ /1993	No	Observation
Along HWY 93, just N. of Victor				

Ravalli	< .5 mile.	6/10/1995	No	Observation
Lee Metcalf NWR, 2 mi. N. of Stevensville				

Ravalli	< .5 mile.	7/12/1995	No	Observation
On HWY 93, 2.3 mi. S. of Victor				

Ravalli	< .5 mile.	7/12/1995	No	Observation
Lee Metcalf NWR, 3 mi. N. of Stevensville				

Ravalli	< .5 mile.	8/14/1995	No	Observation
Florence Bridge Fishing Access Site (pond W. of road and S. of Hwy)				

Ravalli	.5 to 5 mil	7/10/1995	No	Observation
Teller Wildlife Refuge				

Ravalli	< .5 mile.	6/29/1995	No	Observation
Lee Metcalf Refuge at picnic area parking lot pond				

NORTHERN ALLIGATOR LIZARD

Ravalli	.5 to 5 mil	5/13/1910	No	Museum Specimen
Lake Como, 4 mi W of, Rock Creek, 6000 ft.				

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NORTHERN ALLIGATOR LIZARD (continued)

Ravalli	> 10 miles.	9/ /1932	No	Observation
East Fork				

Ravalli	> 10 miles.	9/ /1932	No	Observation
Bear Creek				

Ravalli	.5 to 5 mil	6/21/1931	No	Observation
Goat Mountain				

Ravalli	.5 to 5 mil	6/ 4/1950	No	Museum Specimen
Bass Creek Trail				

Ravalli	.5 to 5 mil	4/12/1962	No	Museum Specimen
Bass Creek, 2 mi. upstream				

Ravalli	.5 to 5 mil	6/21/1931	No	Museum Specimen
Goat Mountain				

Ravalli	> 10 miles.	9/ /1932	No	Museum Specimen
E. Fork of Bitterroot River				

Ravalli	.5 to 5 mil	9/ /1932	No	Museum Specimen
Bear Creek				

Ravalli	.5 to 5 mil	7/26/1963	No	Museum Specimen
Ca. 300 yds. beyond end of rd.; Bass Creek Trail				

Ravalli	< .5 mile.	6/15/1994	No	Observation
Painted Rocks Dam				

Ravalli	< .5 mile.	5/10/1995	No	Observation
Blodgett Canyon				

Ravalli	< .5 mile.	6/20/1995	No	Observation
McCalla Creek				

WESTERN SKINK

Ravalli	> 10 miles.	11/ /1929	No	Museum Specimen
Mill Creek				

Ravalli	.5 to 5 mil	6/ /1933	No	Museum Specimen
Skalkaho Canyon				

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WESTERN SKINK (continued)

Ravalli	5 to 10 mil	6/ 1/1950	No	Museum Specimen
Canyon Creek				
Ravalli	.5 to 5 mil	8/22/1959	No	Museum Specimen
Ravalli	.5 to 5 mil	8/23/1984	No	Museum Specimen
Larry Creek Road, ca. 0.25 mi. Below first jct. above Larry Cr. Campground				
Ravalli	< .5 mile.	8/30/1994	No	Observation
Robbins Gulch				

RUBBER BOA

Missoula	.5 to 5 mil	7/ /1995	No	Observation
Trail leading to Lolo Peak, SW of Missoula				
Ravalli	5 to 10 mil	3/22/1910	No	Museum Specimen
Stevensville				
Ravalli	5 to 10 mil	6/ 3/1910	No	Museum Specimen
Bass Creek, NW of Stevensville				
Ravalli	.5 to 5 mil	/ / 0	No	Museum Specimen
5 miles W. of Victor, Bitterroot Mountains				
Ravalli	> 10 miles.	/ /1940	No	Museum Specimen
Near Hamilton				
Ravalli	.5 to 5 mil	/ / 0	No	Museum Specimen
Upper Lost Horse Canyon				
Ravalli	.5 to 5 mil	/ / 0	No	Museum Specimen
Hamilton				
Ravalli	.5 to 5 mil	/ / 0	No	Museum Specimen
Lost Horse Canyon, Bitterroot Mountains				
Ravalli	.5 to 5 mil	9/12/1952	No	Museum Specimen
Galogly Springs, Highway 93				
Ravalli	> 10 miles.	7/ /1939	No	Observation
Skalkaho Canyon				
Ravalli	> 10 miles.	/ / 0	No	Observation
Sleeping Child Canyon				

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RUBBER BOA (continued)

Ravalli > 10 miles. / / 0 No Observation
near Camas creek

Ravalli .5 to 5 mil 7/ 6/1952 No Museum Specimen
Skalkaho Canyon

Ravalli .5 to 5 mil / 7/1939 No Specimen Reported
Boy Scout Camp; Skalkaho Canyon

Ravalli < .5 mile. 6/18/1994 No Observation
Canyon Creek

Ravalli < .5 mile. / /1994 No Observation
Laird Creek, just W. of last (Western-most) residence in Nat'l Forest

Ravalli < .5 mile. 10/ 3/1995 No Observation
Little Sleeping Child Reservoir Road, just SE of gate

Ravalli < .5 mile. 6/ /1994 No Observation
Blodgett Creek

Ravalli < .5 mile. 6/ /1992 No Observation
Kootenai Creek

Ravalli < .5 mile. 7/18/1995 No Observation
On Bass Creek Trail at wilderness boundary

Ravalli < .5 mile. 7/18/1995 No Observation
Bass Creek Trail #4

RACER

Ravalli > 10 miles. / / 0 No Observation
Skalkaho Canyon

Ravalli .5 to 5 mil / / 0 No Observation
8 mi S of Hamilton

Ravalli .5 to 5 mil 4/27/1932 No Museum Specimen
Skalkaho Canyon

Ravalli .5 to 5 mil 9/17/1941 No Museum Specimen
8 mi. S. of Hamilton

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 Montana Animal Atlas (Herptile)
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RACER (continued)

Ravalli < .5 mile. 8/31/1995 No Observation
 Sleeping Child Creek Road, 5.5 mi due East of Hwy 93; Sect 3 NE

PINE OR GOPHER SNAKE

Ravalli > 10 miles. / / 0 No Observation
 Skalkaho Canyon

Ravalli .5 to 5 mil / / 0 No Observation
 Woodside

Ravalli > 10 miles. / / 0 No Observation
 near Darby

Ravalli 5 to 10 mil 5/ 2/1944 No Museum Specimen
 Girds Creek

Ravalli .5 to 5 mil 7/27/1940 No Museum Specimen
 Hwy 93, near Darby

Ravalli .5 to 5 mil 7/17/1932 No Museum Specimen
 Skalkaho Canyon

Ravalli .5 to 5 mil 7/ 7/1940 No Museum Specimen
 Woodside

Ravalli .5 to 5 mil 9/18/1941 No Museum Specimen
 4 mi. S. of Darby

Ravalli < .5 mile. 6/29/1995 No Observation
 Rye Creek

Ravalli < .5 mile. 9/18/1995 No Observation
 On Hwy 93, 0.2 mi. N. of Rock Creek

Ravalli < .5 mile. 8/11/1995 No Observation
 Hoy's yard

Ravalli < .5 mile. 9/ 6/1995 No Observation
 Hoy's neighbor's yard

Ravalli < .5 mile. 9/25/1995 No Observation
 Hoy's yard

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PINE OR GOPHER SNAKE (continued)

Ravalli .5 to 5 mil / / 1995 No Observation
Lee Metcalf Refuge

Ravalli < .5 mile. 8/ /1994 No Observation
Burnt Fork Rd.

Ravalli < .5 mile. 7/ 4/1995 No Observation
Crazy Creek Campground

WESTERN TERRESTRIAL GARTER SNAKE

Granite > 10 miles. / / 0 No Museum Specimen
W of Philipsburg, Lolo Nat'l Forest

Granite .5 to 5 mil / / 1950 No Museum Specimen
Ca. 20 mi. S. of Clinton, Harry's Flats, Rock Creek

Missoula < .5 mile. 5/ 6/1948 No Museum Specimen
Kitchen Creek at Rock Creek

Missoula < .5 mile. 10/14/1995 No Observation
Miller Cr. Rd. ca. 1.5 mi. NW of Holloman Cr.

Ravalli .5 to 5 mil 4/29/1910 No Museum Specimen
Stevensville, W of, Bass Creek 3725 ft.

Ravalli .5 to 5 mil 8/24/1909 No Museum Specimen
Corvallis

Ravalli .5 to 5 mil 10/26/1945 No Museum Specimen
Hamilton

Ravalli 5 to 10 mil 7/12/1977 No Museum Specimen
Kootenai Creek, 4 mi above Bitterroot River

Ravalli > 10 miles. / / 0 No Observation
Skalkaho Canyon

Ravalli 5 to 10 mil / / 0 No Observation
Mill Creek

Ravalli .5 to 5 mil / / 0 No Observation
Hamilton

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WESTERN TERRESTRIAL GARTER SNAKE (continued)

Ravalli Hamilton	.5 to 5 mil	4/27/1947	No	Museum Specimen
Ravalli W. of Hamilton	.5 to 5 mil	5/4/1950	No	Museum Specimen
Ravalli Bear Creek, 2.5 mi. S. and 5 mi. W. of Victor	.5 to 5 mil	6/23/1982	No	Museum Specimen
Ravalli E. Fork Bitterroot River	> 10 miles.	5/25/1941	No	Museum Specimen
Ravalli Mill Creek Canyon	.5 to 5 mil	8/10/1932	No	Museum Specimen
Ravalli Skalkaho Canyon	.5 to 5 mil	5/31/1931	No	Museum Specimen
Ravalli Lost Horse Cr, Bitterroot Mtns, ca 3.5 mi W of confluence w/Lost Horse Cr.	< .5 mile.	6/16/1995	No	Observation
Ravalli Along HWY 93, 1.7 mi. N. of St. Marys Peak Road	< .5 mile.	7/12/1995	No	Observation
Ravalli On St. Mary Peak Road, 6400 ft.	< .5 mile.	8/10/1995	No	Observation
Ravalli Skalkaho Creek Rd., 0.25 mi. W. of Black Bear Campground.	< .5 mile.	8/31/1995	No	Observation
Ravalli Pond on NW side of road, opposite W Fk Bitterroot River (at mile marker 8)	< .5 mile.	8/15/1995	No	Observation
Ravalli Teller Wildlife Refuge	.5 to 5 mil	7/10/1995	No	Observation
Ravalli Hoy's yard	< .5 mile.	7/14/1995	No	Observation
Ravalli Hoy's property	< .5 mile.	7/24/1995	No	Observation
Ravalli Hoy's neighbor's yard	< .5 mile.	7/10/1995	No	Observation

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WESTERN TERRESTRIAL GARTER SNAKE (continued)

Ravalli < .5 mile. 9/23/1995 No Observation
Hoy's property

Ravalli .5 to 5 mil / / 1995 No Observation
Lee Metcalf Refuge

Ravalli < .5 mile. 8/29/1995 No Observation

Ravalli < .5 mile. 10/20/1995 No Observation
Ca. 1.5 mi. W. of Big Creek trailhead, along trail.

COMMON GARTER SNAKE

Ravalli .5 to 5 mil 10/26/1945 No Museum Specimen
Near Hamilton

Ravalli 5 to 10 mil 10/ 3/1945 No Museum Specimen
Como Lake

Ravalli 5 to 10 mil 7/23/1944 No Museum Specimen
Como Lake

Ravalli 5 to 10 mil / / 0 No Observation
Lake Como

Ravalli .5 to 5 mil 6/23/1982 No Museum Specimen
Bear Creek, 2.5 mi. S and 5 mi. W. of Victor

Ravalli .5 to 5 mil 8/23/1984 No Museum Specimen
Ca. 300 m. beyond end of rd., Bass Creek Trail

Ravalli .5 to 5 mil 5/23/1938 No Museum Specimen
Gird Creek

Ravalli .5 to 5 mil 6/27/1932 No Museum Specimen
Lake Como

Ravalli < .5 mile. 3/19/1995 No Observation
NW corner of Lake Como, ca. 16 mi. SW of Hamilton

Ravalli < .5 mile. 6/17/1995 No Observation
0.75 mi. up Sweathouse Creek from trailhead, 4350 ft.

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Montana Animal Atlas (Herptile)
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COMMON GARTER SNAKE (continued)

Ravalli < .5 mile. 8/31/1995 No Observation
On Lost Horse Creek Rd., ca. 0.5 mi. W. of Hwy 93.

Ravalli .5 to 5 mil 7/10/1995 No Observation
Teller Wildlife Refuge

WESTERN RATTLESNAKE

Ravalli .5 to 5 mil 7/10/1932 No Observation
Medicine Springs

Ravalli > 10 miles. 8/ 5/1940 No Observation
Sleeping Child Canyon

Ravalli .5 to 5 mil 8/ 5/1940 No Museum Specimen
Sleeping Child Canyon

Ravalli < .5 mile. 8/11/1994 No Observation
Sleeping Child Creek

Ravalli .5 to 5 mil 7/ 1/1963 No Museum Specimen
5 mi. S. and 9 mi. E. of Hamilton

APPENDIX 4.

DATA SHEETS USED FOR

AMPHIBIAN AND REPTILE

SURVEYS AND OBSERVATIONS

AMPHIBIAN SURVEY DATA SHEET

AMPHIBIAN SURVEY DATA SHEET - US FISH & WILDLIFE SERVICE, 4612 McMURRY AVE, FT. COLLINS, CO 80526-3400

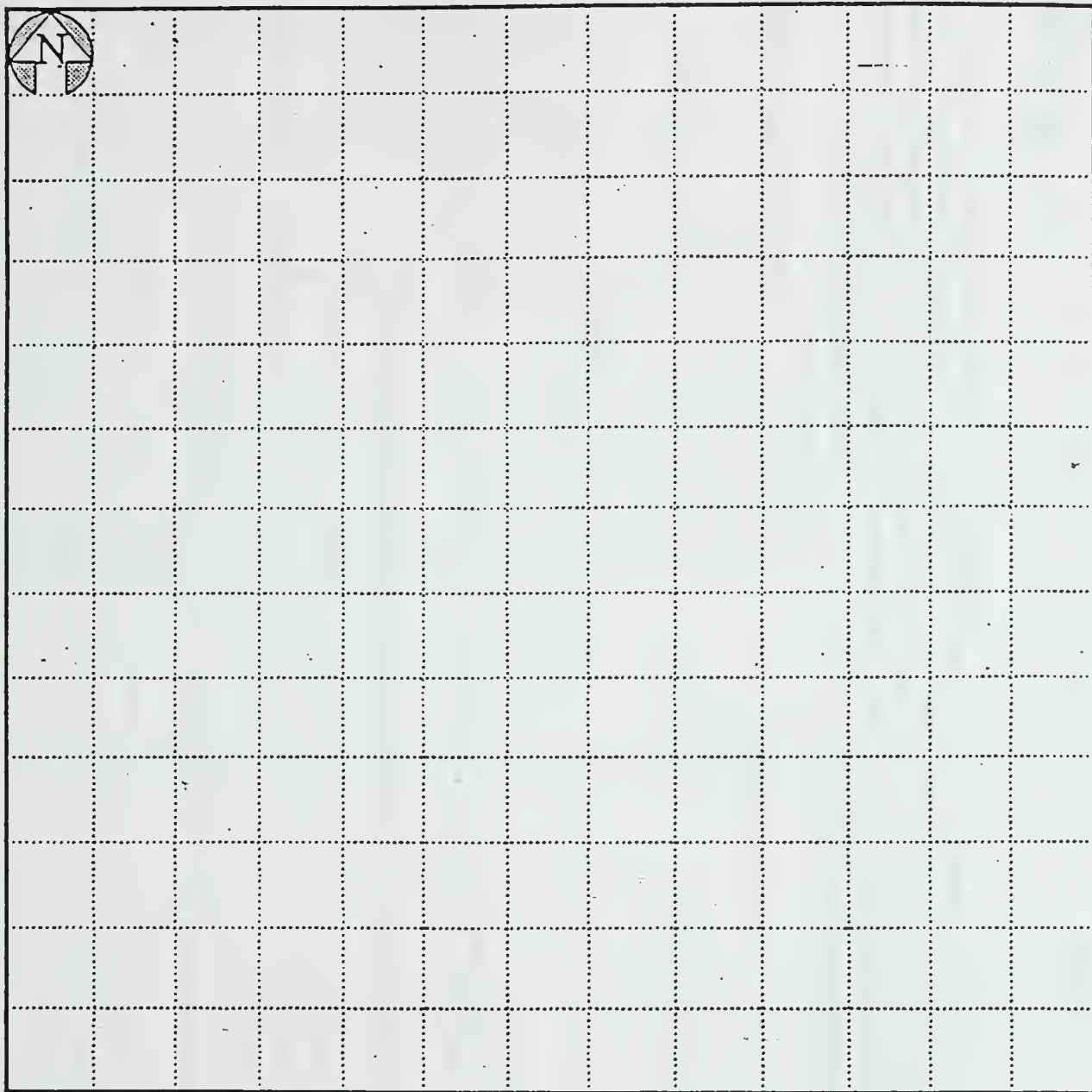
(circle choices for shaded variables; supply value for others)

(ver. 27/92)

DATE		BEGIN TIME	END TIME	OBSERVERS															
LOCALITY																			
STATE		COUNTY	MAP NAME		OWNER		ELEVATION <small>(circle scale)</small>	M FT											
T	R	S	SECTION DESCRIPTION		UTM ZONE	NORTHING <small>(or LAT)</small>		EASTING <small>(or LONG)</small>											
AMPHIBIAN AND/OR GARTER SNAKE SPECIES PRESENT <small>(INDICATE NUMBERS IN CATEGORIES IF POSSIBLE)</small>										CIRCLE METHOD AND INDICATE IF VOUCHER SPECIMEN WAS COLLECTED									
SPECIES		ADULTS/JUVENILES		CALLING?		TADPOLES/LARVAE		EGG MASSES		METHOD:									
				Y N						VISUAL/AURAL ID DIP NET/SEINE HAND COLLECTED TRAPPED VOUCHER COLLECTED? YES NO									
				Y N						VISUAL/AURAL ID DIP NET/SEINE HAND COLLECTED TRAPPED VOUCHER COLLECTED? YES NO									
				Y N						VISUAL/AURAL ID DIP NET/SEINE HAND COLLECTED TRAPPED VOUCHER COLLECTED? YES NO									
				Y N						VISUAL/AURAL ID DIP NET/SEINE HAND COLLECTED TRAPPED VOUCHER COLLECTED? YES NO									
				Y N						VISUAL/AURAL ID DIP NET/SEINE HAND COLLECTED TRAPPED VOUCHER COLLECTED? YES NO									
FISH PRESENT? YES ??? NO				FISH SPECIES:															
ENTIRE SITE SEARCHED? YES NO				IF NO, INDICATE AREA						METERS OF SHORELINE MP OF HABITAT									
PHYSICAL AND CHEMICAL ENVIRONMENT (CHEMISTRY VARIABLES OPTIONAL - USE EXTRA SPACES FOR ADDITIONAL MEASUREMENTS)																			
WEATHER:		CLEAR		OVERCAST		RAIN		SNOW		WIND:		CALM		LIGHT STRONG					
AIR TEMP <small>(circle scale)</small>		°C °F		WATER TEMP <small>(circle scale)</small>		°C °F		COLOR:		CLEAR STAINED		TURBIDITY:		CLEAR CLOUDY					
pH		ANC																	
SITE DESCRIPTIONS - (SKETCH SITE AND PUT ADDITIONAL COMMENTS ON BACK OF SHEET) OMIT THIS SECTION IF DATA HAVE BEEN COLLECTED ON A PREVIOUS VISIT																			
ORIGIN:		NATURAL		MAN-MADE		DRAINAGE:		PERMANENT		OCCASIONAL		NONE							
DESCRIPTION:		PERMANENT LAKE/POND		TEMPORARY LAKE/POND		MARSH/BOG		STREAM		SPRING/SEEP		ACTIVE BEAVER POND		INACTIVE BEAVER POND					
SITE LENGTH (M)		SITE WIDTH (M)		MAXIMUM DEPTH:		< 1 M		1 - 2 M		> 2 M									
STREAM ORDER		1		2		3		4		5 +									
PRIMARY SUBSTRATE:		SILT/MUD		SAND/GRAVEL		COBBLE		BOULDER/BEDROCK		OTHER									
% OF POND LAKE MARGIN WITH EMERGENT VEGETATION:		0		1 - 25		25 - 50		> 50											
EMERGENT VEGETATION SPECIES <small>(LIST IN ORDER OF ABUNDANCE)</small>																			
NORTH SHORELINE CHARACTERS:		SHALLOWS PRESENT		SHALLOWS ABSENT		EMERGENT VEG PRESENT		EMERGENT VEG ABSENT											
DISTANCE (M) TO FOREST EDGE		FOREST TREE SPECIES:																	

ROUGH SKETCH OF SITE

GRID SPACING IS ____ METERS BETWEEN LINES



ADDITIONAL NOTES:

Miscellaneous Observation Form
 Montana Natural Heritage Program
 1515 E 6th Ave
 PO Box 201800
 Helena, MT 59620-1800

Observer _____
 Address _____
 Phone No. _____



INSTRUCTIONS: Please use this sheet to submit sight, call, or specimen records of any Montana amphibian or reptile species. Use a separate line for each species and site. On the back of the sheet include any additional comments or supporting information. Please provide as specific location information as possible, particularly for the following species of special concern: Coeur d'Alene Salamander, Idaho Giant Salamander, Tailed Frog, Canadian Toad, Wood Frog, Snapping Turtle, Spiny Softshell, Short-horned Lizard, Sagebrush Lizard, Western Hognose Snake, and Smooth Green Snake. Documentation is required for Idaho Giant Salamander and Wood Frog (photo, through description, verification by experienced observer, etc.). An identification guide is available in the May/June 1995 issue of Montana Outdoors (reprints available at the MT Nat. Heritage Prog.).

Species	Location	County	Township Range Section or UTM	Date Mo/Day/Yr	Time	# Adults	# Larvae
Example: Leopard Frog	McNab Pond	Carter	T01N R59E Sect 19 NE	5/20/94	8:30a	5	200
Example: Milk Snake	3.4 mi W, 1.2 mi N of Harlowton	Wheatland	5145200 N, 584700 E	8/15/94	11:15p	1	
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							

Comments: Include method of observation, measurements, documentation for species of special concern, disposition of specimens, weather, etc. Numbers correspond to those on the other side of this sheet. Use additional space or sheets if necessary.

Example: Sunny warm day, about 75°. Adults (3 seen; 2 heard calling only) at margin of ponds in cattails. Very small tadpoles seen; 1 egg mass still present.	
Example: Found dead in the road in sagebrush flat near rinrocks; 24" long; Colored with bands of yellow / black / red / black / yellow ...; deposited in MSU Museum	
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	

